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DEDADISRDWKFAAMVVDRLCLIFTLFTITATLAVLLSAPHINVS"
                                                                                                                                                                                        PAT 06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                      Adamczewski,M.D., Schulte,T.D. and Oellers,N.D.
Nucleic acids encoding acetylcholin-receptor subunits from insects
Patent: EP 0962528-A 3 08-DEC-1999;
BAYER AG (DE)
                                        TGCCTTATTATTATCTTTACCTGTTCACAATCATCGCCACGCTAGCCGTGCTGCTGCTGCTGCCGCG
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                    CysLeuPheValPheThrLeuPheThrIleIleAlaThrValAlaValLeuLeuSerAla
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Heliothis virescens
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Meoptera; Endopterrygota; Lepidoptera; Glossata; Ditrysia;
Noctuoidea; Noctuidae; Heliothinae; Heliothis.
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Sequence 3 from Patent EP0962528.
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AX009612.1 GI:9996844
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                                                                                                 GlyllePheLysSerThrCysLysMetAspIleAlaTrpPheProPheAspAspGlnHis 160
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CCCCACAGACTATGGAAACCAGACGTCCTTATGTACAACAGCGGGGGCGAAGGGGTTCGAC
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Qy		476 CysLeuPheValPheT 1745 TGCCTTATTATCTTTP		ESB147 LOCUS ESB347 LOCUS ESB347 DEFINITION Nucleic acid encoding insect	ACCESSION ES8347.1 GI:13019346 KEYWORDS JP 2000023680-A/2. SOURCE Heliothis virescens (tobacco bu	Ē	The Extende 1 and Thomas, AUTHORS Martin, A. Nadja, E. and Thomas, TITLE Nucleic acid encoding insect ac JOURNAL Patent: JP 2000023680-A 2 25-JA	COMMENT 0S PN JP 2000023680-A/2 PD 25-JAN-2000	FF CS-AFK-1999 DE 199918159 PR 04-MAY-1998 DE 19819829. PI MARTIN ADAMUTSUEUSUKI,NADU CINNIS/09,AOIK67/033,CO7K14/705	PC GOIN33/15,GOIN33/50//(CI2N FH Key Location/Q		/mol_type="genomic DNA /db_xref="taxon:7102" ORIGIN	nment Scores: 7.27e-164 No.: 1803.50 snt Similarity: 79.21%		-09-303-232-	Db 368 GGGCGGGGGGCTGCTGCTGCTGTG Qy 21 ProHisGluLysArgLeuLeuAsnAlaLe	428	2y 41 VALALAAANGLUVAEGUUVE 41 VALALAAAGAAGAAGAAGCGACCGGTGCAGCT 55 GTCGTCAACGAAGAGGACCGACCGCTGCAGCT
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8 8 8 8 8 8 8	Qy Db RESULT 14 DMES54210 LOCUS DEFINITION VERSION VERSION KRYWORDS	I H DK K	FEATURES sour sour gene	ន ភ្នំ ភ្នំ	ORIGIN
Oy 61 AspValAspGluLysAsnGlnLeuLeulleThrAsnIleTrpLeuSerLeuGluTrpAsn 80		201 MetProGlyLysLysasnThrileThrTyralacysCysProGluProTyrVallssDVall:::		341 341 1388 361 1445 381	Qy 401 GlyAsnLeuGlyPrGGlyCysSerIlePheArgThrAspPheArgArgSerPheValArg 420 Db 1547CGGCAATGCTGCGATACTACAGGGGGGGT 1576

Alignment Scores:

PEATANGGRMLVYGLGLLIMIPACAAGPHEKRLLH
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ILRWQRFAGQVGYFCPPPSSSSSSASGEKKQQIQN
CNHRCASATLPHQPTYXFTMYRQGDDGSVGPVGFA
GLHALLKELRMITEQLKKEDETSDITRDWKFAAMV
APHPIVSGVRG" | :::||| |GGCGGCGCACAGTTGCTTCGGTGTCGAC 1624 ABPABLAALAMETVALVALASPARGPhe 475 eAlaThrValAlaValLeuLeuSerAla 495 |||||||||| |CGCCACGCTAGCCGTGCTGCTCCGCG 1804 mRNA linear INV 01-APR-2003 icotinic acetylcholine receptor ----His 435)., Department of Pharmacology, treet, London, WC1E 6BT, UNITED xxapoda; Insecta; Pterygota;
Brachycera; Muscomorpha;
bhila. ylcholine receptor subunit 1choline receptor subunit Icholine receptor subunit uGlySerHisanogaster"

6 6 7 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	Darphas, Laptana and Darphas, in Diosophilia merandgaser, identify New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-Mediated A-to-1 Pre-mRNA Editing Genetics 160 (4), 1519-1533 (2002) 21969411 11973307 2 chases 1 to 2907) 2 chases 1 to 2907) Direct Submission Submission Submission Submission Submission Submitted (27-mAx-2000) Human Anatomy and Genetics, MRC-FGU, University of Oxford, South Park Road, Oxford OX1 3QX, UK Location/Qualifiers 12907
09 09 09 09 09 09 09 09 09 09	JOURNAL MEDLINE PUBMED REFERENCE AUTHARS TITLE JOURNAL FEATURES
### 1683 ### 1683 ### 1683 ### 1983 ###	
3.93e-164 Le	264 LeuGlyValThrIleLeuLeuSerLeuThrValPheLeuAsnLeu 863 CTTGGAGTTACAATTCTATTATCGCTTACAGTCTTCCTCAACAT 284 ProGlnValSerAspalaIleProLeuLeuGlyThrTyrPheAsi
Pred. No.: Score: Score: Best Local Simil Best Local Do.: Duery Match: DB: US-09-303-23; Qy Qy Qy Db Qy Db Qy Db Qy Db Qy Db Qy Db Cy Cy Db Cy Db Cy Cy Cy Db Cy Cy Cy Db Cy Cy Cy Cy Cy Db Cy	6 6 6 6 6 6

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CTGTTACACGATCTTTTGGATCCTTATAATACACTAGAACGTCCCGTTCTCAATGAATCG 1290
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                                                                                                                                TrpAsnAspSerGluTyrGlyGlyValLysAspLeuArgIleThrProAsnLysLeuTrp
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                                                                                                                -GlyProHisGluLysArg
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                                                                                                                                                                                                                                                                                                                                                 AATCAATTIGCTAGTCACTAATGTGTGGTGAAAACTGGGAACGGCATGAATCTCCGC
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                                                                                                                                                                                                                                                        GluProLeuGluValArgPheGlyLeuThrLeuGlnGlnIleIleAspValAspGluLys
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     69 4 6
       Mismatches:
                        Indels:
                                       Gaps:
                                                                                                            LeuLeuAlaLeuLeuProValSerGluGln
                                                                          US-09-303-232-6 (1-501) x AF272778 (1-2907)
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compared to B allele"
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Percent Similarity:

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SerargProGlyLysLysLleThrargLysThrlleMetMetAsnThrarg ::::::::::::::::::::::::		LeuleualaasnValleuaspIIeaspaspaspabpeargHisGlyProProProPro 	ProasnSerThralaSerThrGlyAsnLeuGlyProGlyCysSerIlePheArgThrAsp 	AGCA	Glyser	GluLeuHisLeuIleLeuArgGluLeuGlnPheIleThrAlaArgMetLysLysAla 	AspolugiualagiubeuileSeraspTrpLysPhealaalaMetValValAspArgPhe 	CysLeuPheValPheThrLeuPheThrIleIleAlaThrValAlaValLeuLeuSerAla :::	
TTCCCGACCA	LeuGluLeul ::: 3TTGAGCTGA	AspPheArgH SACTTCCGGC	3lyProGlyC CCACACAACC	MetGluAspV	-HisHisArg- ccAtcATACGT	3lnPheile1 ::: CGCTTTATAA	LysPheAlaA 	IleAlaThr\ ::: rrAGCCACAA	
SerArgProGlyLysLyslleThrArgLys- agrcgcccaggacgacgcrgarccragagr	MetArgGlu ::: :: \CTCTCCGAC	LeuleualaasnvalleuaspileaspaspaspPheargHisGly 	GlyasnLeu GGAACACTG	PheArgArgSerPheValArgProSerThrMetGluAspValGly ::: ::	GCGGTCACC	ArgGluLeu ::: ::: AAGGAAATT	SerAspTrp ::: :AATGATTGG	PheThrile Trcgcaara	
/LysLysile ::: \cGACCGCTC	SCACCAGATA	nvalleuAsr GTACTAGAC	rAlaSerThr	rPheValArg		steulleter rrraarcrra	aGluLeuIle ::::: rGACATTGCC	PheThrLeuF ::: ATTCACAATGI	eval 500 TGTC 2706
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Neuronal Caenorhab Drosophil

Human pol

Human neu Human CHR

Neuronal

Human neu Human neu Drosophil Human neu Neuronal

Abbs54875
Abv73248
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Aav44687
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Chimeric

Human neu Drosophil

Human neu

Human neu

Human neu Alpha 2 s Human neu Human neu

Prostate Human neu Human 205 Human 205 Caenorhab Modified

Adc71168 | Aad20961 | Aa145867 |

New nucleic acid encoding a nicotinic acetylcholine receptor from insects, used to identify potential insecticides.

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Schulte

Adamczewski M, Oellers N,

(FARB) BAYER AG.

2000-014207/02.

P-PSDB; AAY50816.

Abl07231 Drosophil Aaz24476 H. viresc Aaz24475 D. melano Abl13733 Drosophil Aac58395 Human PRO Aav12197 Human neu

ABL07231
AAZ24476
AAZ24475
ABL13733
AAC58395
AAC90380
AAV12197

3109 1540 3700 2886 936 1509 1509

100.0 74.5 68.3 60.9 48.6 47.7 47.7

1803.5 1803.5 1609 1283.5 1288.5 1258.5

12645978

Aaz24477 H. viresc

AAZ24477

2640

Score

Result М В

Neuronal

Mutant hu Mutant hu Mutant hu

V274T var

Neuronal

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Acetyl-choline receptor; nicotinic; insect; insecticide; screening; neurotransmission; plant protection agent; conductance; AChR; ds.
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AAT59196
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-MODEL=frame+ p2n.model -DEV=xlh
-Q=/Cogn2 1/0879302322/runat 07052004 101109 23873/app query.fasta_1.2261
-Q=/Cogn2 1/087970 spool/1809303232/runat 07052004 101109 23873/app query.fasta_1.2261
-DB=N Geneseq_29Jan04 -QFWT=fastap -SUFFIX=rng -MINMATCH=0.1 -LGOPCL=0
-LOOPEXT=0 -UNITSE-bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DGCALIGN=200 -THR SCORE=pct -THR MAX=100 -THR MIN=0 -ALIGN=15
-MODE=LOCAL -OUTFWT=pto -NORMSext -HEAPSIZE=500 -MNINENG -MAXIEN=2000000000
-USER=US09303232 @CGN 1 11200 @runat 07052004 101109 23873 -NCPU=6 -ICPU=3
-NO MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
-DEV TIMBOUT=120 -WARN TIMEOUT=30 -THREADS=1 -XGAPDF=10 -XGAPEXT=0.5 -FGAPOP=6
-FGAPERT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELEXT=7
                                                                                                           8, 2004, 06:39:04 ; Search time 526.234 Seconds (without alignments) 4044.486 Million cell updates/sec
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(c) 1993 - 2004 Compugen Ltd.
                                                                               frame_plus_p2n model
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                                                                                                                                                                                                                                                                                                                                                       3373863 seqs, 2124099041 residues
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                                                   This invention describes a novel nucleic acid (NA) encoding a nicotinic acetyl-choline receptor (I) from insects which can be used as an insecticide. Inhibitors of (I) interfere with neurotransmission. (I) (also vectors containing it, its regulatory regions, and antibodies directed against (I) encoded proteins) are used to screen for: (a) plant protection agents that alter conductance of ACHR, potentially useful as insecticides, or (b) genes which encode polypeptides that are involved in formation of functionally related ACHR in insects. (I) are also used to recombinant production of (II). This sequence encodes an acetyl-choline receptor isolated from Heliothus virescens
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                                                                                                                                              New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signaling and cell-cell interactions.
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                                                                                                                                                                                 Claim 1; SEQ ID NO 16175; 21pp + Sequence Listing; English.
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                                           AspValAspGluLysAsnGlnLeuLeuIleThrAsnIleTrpLeuSerLeuGluTrpAsn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (also vectors containing it, its regulatory regions, and antibodies directed against (1)-encoded proteins) are used to screen for: (a) plant protection agents that alter conductance of ACHR, potentially useful as insecticides, or (b) genes which encode polypeptides that are involved in formation of functionally related ACHR in insects. (I) are also used to isolate and characterize the specifide regulatory regions and for recombinant production of (II). This sequence encodes an acetyl-choline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGCCGCGGGGCCTGCTGCTGTGCCTGTCTCGCCGAGGGGGCACGCTGCGGG 427
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This invention describes a novel nucleic acid (NA) encoding a nicotinic acetyl-choline receptor (I) from insects which can be used as an insecticide. Inhibitors of (I) interfere with neurotransmission. (I)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaProMetLeuAlaAlaLeuAlaLeuLeuAlaLeuLeuLeuProValSerGluGln---Gly
                                                                                                                                                                                    Acetyl-choline receptor; nicotinic; insect; insecticide; screening; neurotransmission; plant protection agent; conductance; AChR; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acid encoding a nicotinic acetylcholine receptor from ets, used to identify potential insecticides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BP; 893 A; 953 C; 944 G; 910 T; 0 U; 0 Other;
                                                                                                                                                            H. virescens acetyl-choline receptor DNA from clone Hva7-1.
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/product= "acetyl-choline receptor"
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    TTGGAAGTTCGCGGCAATGGTTGTGGATAGG 1537
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isolate and characterize the specified regulatory regions and for recombinant production of (II). This sequence encodes an acetyl-choline receptor isolated from Drosophila melanogaster
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                                                  Sequence 2886 BP; 942 A; 687 C; 640 G; 617 T; 0 U; 0 Other;
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|GCCTTATTATCTTTACCCTGTTCACAATCATCGCCAGGCTAGCCGTGCTGCTGTCCGCG 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This invention describes a novel nucleic acid (NA) encoding a nicotinic acetyl-choline receptor (I) from insects which can be used as an insecticide. Inhibitors of (I) interfere with neurotransanission. (I) also vectors containing it, its regulatory regions, and antibodies directed against (I)-encoded proteins) are used to screen for: (a) plant protection agents that alter conductance of ACHR, potentially useful as insecticides, or (b) genes which encode polypeptides that are involved in formation of functionally related ACHR in insects. (I) are also used to
      GlyAsnLeuGlyProGlyCysSerIlePheArgThrAspPheArgArgSerPheValArg 420
                                                                                                            436 ArgGluLeuHisLeulleLeuArgGluLeuGlnPhelleThrAlaArgMetLysLysAla 455
                                                                                                                                                                                                                    CysLeuPheValPheThrLeuPheThrIleIleAlaThrValAlaValLeuLeuSerAla 495
                                                                                                                                                                AspGluGluAlaGluLeuIleSerAspTrpLysPheAlaAlaMetValValAspArgPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Acetyl-choline receptor; nicotinic; insect; insecticide; screening; neurotransmission; plant protection agent; conductance; AChR; ds.
                          ---CCGCAATGCTGCCGATAC-----TACAGGGGGGT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New nucleic acid encoding a nicotinic acetylcholine receptor insects, used to identify potential insecticides.
                                                                                                                                                                                                                                                                                                                                                                                                                                 melanogaster acetyl-choline receptor DNA from clone Da7.
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                                                         421 ProSerThrMetGluAspValGlyGlyGlyLeuGlySerHis
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                                  SerSerValValLeuThrValValValLeuAsnTyrHisHisArgThrAlaAspIleHis
                                                                                                                           SerArgProGlyLysLysIleThrArgLys-----ThrIleMetAsnThrArg
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The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL16176-ABL30511), expressed DNA BBR2072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signaling and cell-cell interactions.
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                                                                                                                          LeuGlyValThrIleLeuLeuSerLeuThrValPheLeuAsnLeuValAlaGluThrLeu 283
    GlyGlyAspLeuSerAspPhelleThrAsnGlyGluTrpTyrLeuIleGlyMetProGly
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                                                                                                                                                                                                                                                                                                                   Human; tumour; diagnosis; neoplastic disease; neoplastic cell growth; proliferation; tumourigenesis; identification; cancer; cytostatic; nootropic; neuroprotective; antiinflammatory; immunosuppressive; immunostimulant; antiangiogenic; leukaemia; lymphoid malignancy; neuronal disorder; glial disorder; astrocytal disorder; angiogenic; hypothalamic disorder; glandular disorder; macrophagal disorder; epithelial disorder; stronal disorder; stronal disorder; stronal disorder; stronal disorder; stronal disorder; ss.
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                                          LysLysAsnThrIleThrTyrAlaCysCysProGluProTy
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The present invention describes an isolated antibody that binds to one of the human PRO proteins designated PR0212, PR0290, PR0341, PR0535, PR0619, PR0310, PR0319, PR0319, PR0319, PR01025, PR01013, PR01031, PR01031, PR01031, PR01032, PR01031, PR01031, PR01032, PR01031, PR01181, PR01181, PR01031, PR01031, PR01181, PR01031, PR01031, PR01181, PR01181, PR01181, PR01181, PR02184, PR01187, PR01181, PR02184, PR01187, PR01181, PR02181, PR02184, PR01187, PR01181, PR02184, PR02184, PR01187, PR01181, PR02184, PR0
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AAC90380 standard; cDNA; 1509

AAC90380

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Special cell culture medium for treating cells and for inducing mammalian cell lines to conduct calcium ions, comprising specified concentrations of ions of sodium, calcium and potassium at specified pH.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is the coding sequence for wild-type human alpha7 nicotinic acetylcholine gated ion channel. The human alpha7 ion channel was used in the construction of an alpha7/5-hydroxytryptamine (5-H73) chimeric ligand gated ion channel (see AAC90382 and AAB50014). The alpha7/5-H73 chimeric ion channel can be expressed by recombinant cells in the present invention, resulting in preferential calcium ion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGGCGCTGGCGTCGCTCCTGCACGTGCCTGCAGGGAGTTCCAGAGGAAGCTT
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                                    Human, alpha7 nicotinic acetylcholine gated ion chann
5-hydroxytryptamine, 5-HT3; calcium ion conductance;
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Conservative:
Mismatches:
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                                                                                                                                                                                                                                              GAAAGGITCTAIGAGIGCTGCAAAGAGCCCTACCCTGATGTCACCTTCACAGTGACCAIG 678
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CCAGACATTCTTCTATAACAGTGCTGATGAGCGCTTTGACGCCACATTCCACACTAAC 387
                                                                                                                                                                                                                                                                             ArgArgArgThrLeuTyrTyrPhePheAsnLeuIleValProCysValLeuIleSerSer 246
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                                         CysLysMetAspIleAlaTrpPheProPheAspAspGlnHisCysAspMetLysPheGly
                                                                                      ValValValArgSerGlyGlySerCysLeuTyrValProProGlyIlePheLysSerThr
                                                                                                                                             TCCTGGTCTTACGGAGGCTGGTCCTTGGATCTGCAGATGCAGGAG------GCAGAT
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The present sequence encodes a human neuronal nicotinic acetylcholine receptor (NAChR) subunit. The cells expressing the alpha and/or beta NAChR subunits may be used in a method of screening compounds to identify any which modulate the activity of human neuronal NAChR. Subunit specific antibodies may be used to monitor the distribution and expression density of various subunits in normal vs diseased brain tissues. Testing of single receptor subunits or specific receptor subunit combinations with a variety of potential agonists or attached strongers information with srespect to the function and activity of the individual subunits and should lead to the identification and design of compounds that are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              than drugs
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The resulting drugs should exhibit fewer unwanted side effects than drug
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alpha-7 subunit"
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Length:
Matches:
Conservative:
Mismatches:
Indels:

2.02e-124 1258.50 63.23% 48.64% 47.67%

Similarity:

Query Match:

Best Local

Percent Similarity:

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          A DNA sequence (AAT48239) codes for the alpha-7 subunit (AAW09025) of th human neuronal nicotinic acetylcholine receptor (nAChR). Host cells, esp mammalian cells or amphibian ocoytes, carrying alpha-7 nucleic acids, opt. in combination with other alpha and/or beta subunit nucleic acids (see also AAT48232-38, AAT48240-41), express recombinant nAChR subunits useful for identifying cpds. that modulate the activity of human nAChRs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to a method for identifying compounds that are antagonists or agonists of human neuronal nicotinic acetylcholine receptors (nNAChRs), by contacting recombinant cells with a test compound and measuring ion flux, the electrophysiological response of the cells or binding of the test compound to the nNAChR. The recombinant cells are produced by transfection with a nucleic acid encoding at least one human machR (alpha or beta) subunit, such that the cells express an nNAChR comprising one human subunit encoded by the transfected nucleic acid. This sequence represents cDNA encoding the alpha 7 subunit of the human nNAChR polypeptide
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P-PSDB; ABG70492.
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30-NOV-1992;
08-MAR-1993;
                                      07-JUN-1995;
                                                                                                                                                 08-NOV-1993;
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The invention relates to a suitable host cell transfected with an isolated nucleic acid molecule comprising a sequence of nucleotides or ribonucleotides that encodes at least one alpha or beta subunit of a human neuronal nicotinic acety/choline receptor (NAChR). The compositions and methods of the present invention, which provide a means to prepare synthetic or recombinant receptors and receptor subunits that are substantially free of contamination from many other receptor proteins, are useful for observing the effect of a drug substance on a particular subtype to perform in vitro screening of the drug substance in a test system that is specific for humans. The antibodies can be used in immunochemistry and for diagnostic and therapeutic applications. The present sequence represents a human neuronal NAChR alpha7 subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cell comprising nucleic acids encoding human alpha and beta subunits of neuronal nicotinic acetylcholine receptors, useful for in vitro screening of a drug substance in a test system specific for humans.
                                                                                                                                                                                                           nicotinic acetylcholine receptor; NAChR; drug screening; NAChR alpha7 subunit; gene; ss.
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                                                                                                                                                                                                                                                                                                                              /product= "NAChR alpha7 subunit"
/note= "neuronal nicotinic acetylcholine receptor"
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               Siegel R,
IleAlaThrValAlaValLeuLeuSerAlaProHisIleIle
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CTGGCGCTGGCGCTCCTGCAGGCGAGTTCCAGAGGAAGCTT
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                                                              Tacaaggagcrigercaagaacriacaarcecriregagagaggcccgrigeccaargaacrigecaa
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x ABV73248 (1-1876)

US-09-303-232-6 (1-501)

1876 250 75 138 51

Length: Matches: Conservative: Mismatches:

2.02e-124 1258.50 63.23% 48.64% 47.67%

Similarity:

Query Match: Best Local

Percent Similarity:

Alignment Scores:

Indels: Gaps:

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New nucleic acid encoding an alpha-6 or a beta-3 subunit of a human neuronal nicotinic acetylcholine receptor (nAChR), useful for identifying compounds that modulate human neuronal nAChR activity.

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                               ---GCCAGCAACGGGAACCTGCTACATC
                                                   ----GlyProGlyCys
                                                                    1234 GGCTTCCGCGGCCTGGACGGCGTGCACTGTGTCCCGACCCCCGACTCTGGGGGTAGTGTGT
                                                                                                                                                         446 GlnPheIleThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSerAspTrp
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                 PheArgHisGlyProProProAsnSerThrAlaSerThrGlyAsnLeu
                                                                                                                                                                                                                                       ds; gene; alpha 7 subunit; human; neceptor; ligand-gated neuronal nicotinic acetylcholine receptor; ligand-gated synaptic transmission; gene therapy; transgenic.
                                                                                                                                                                                                                                                                                                                                receptor alpha 7
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                                     The invention relates to an isolated nucleic acid molecule comprising a nucleotide sequence encoding an alpha 6 or a beta 3 subunit of a human neuronal nicotinic acetylcholine receptor nACHR. NACHR 8 form ligandgated ion channels that mediate synaptic transmissions between nerve and muscle and between neurons upon interaction with the neurotransmitter acetylcholine. The nucleic acid molecule is useful for identifying receptor, nachr by a modulate human neuronal nach. The present sequence receptor, nACHR, alpha 7 subunit. Note: the present sequence decodes to the protein shown in ADA10974 not the one described in the specification
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Conservative:
Mismatches:
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Col 67-72; 63pp; English
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63.23%
48.64%
47.67%
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Best Local Similarity:
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                                MetProGlnTrplleLysSerValPheLeuGlnTrpLeuProTrplleLeuArgMetSer 346
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                                                        ThrIleLeuLeuSerLeuThrValPheLeuAsnLeuValAlaGluThrLeuProGlnVal 286
                                                                                                                                 SerValValLeuThrValValValLeuAsnTyrHisHisArgThrAlaAspIleHisGlu 326
CGCCGCAGGACGCTCTACTATGGCCTCAACCTGCTGATCCCCTGTGTGCTCATCTCCGCC 810
                                                                                             SerAspAlalleProLeuLeuGlyThrTyrPheAsnCysIleMetPheMetValAlaSer 306
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|TCCGATTCGGTACCATTGATAGCCCAGTACTTCGCCAGCACCATGATCGTGGGGCCTC
                                                                                                                                                                                                           ArgProGlyLysLysLleThrArgLysThrIleMetMetAsnThrArgMetArgGluLeu
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                   MetAlaLeuLeuGlyPheThrLeuProProAspSerGlyGluLysLeuThrLeuGlyVal
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alpha7 nAChR, alpha7 nicotinic acetylcholine receptor subunit; cance neurodegeneration; enzyme dysfunction; affective disorder; therapy; immune dysfunction; diabetic neuropathy; Alzheimer's disease;
                                                                                                                                                                                                                                                                                      387 PheArgHisGlyProProProAsnSerThrAlaSerThrGlyAsnLeu----
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                                                                                                                                                                                                                                                                    GCCAGTGTGGAGATGAGCGCCGTGGCG---
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schizophrenia; ss.

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This sequence encodes the V247T variant of human alpha7 nicotinic acetylcholine receptor (nAChR) subunit of the invention. Cells containing the DNA are used to express the protein and to identify medulators of alpha7 nAChR activity or cytoprotective agents, e.g. antisense compounds or antagonists that are potentially useful for treating environment, enzyme dysfunction, affective disorders and immune dysfunction, such as cancer, post-herpetic neuralgia, diabetic neuropathy, osteoarthritis, Alzhaimer's or Parkinson's diseases, kuru, psychosis and schizophrenia. Probes based on the DNA are used to detect the DNA in usual hybridisation or amplification tests, while monoclonal antibodies are used to detect the protein for diagnosis (in vitro or by in situ immuno-fluorescent assay). Compared with wild-type alpha7 nAChR, the protein has about 100-fold greater sensitivity to cholinersic receptor agonists (nicotine or acetylcholine) and response to these
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Monteggia LM,
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Indels:
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9. .1517
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Sullivan JP,
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2 cDNA clones (AAT59196 and AAT59197) respectively code for the alphal bungarotoxin binding protein (ABM). They were isolated from an 18-day embryo chick brain cDNA library using a probe (see also AAT59198) based on the N-terminal amino acid sequence of chicken brain ABBP. The probe isolated partial clone pCh29-1, which encoded the N-terminal portion of alphal. A subclone, pCh29-3 (ATCC 40641), was used to rescreen the library, yielding clone pCh31-1 (ATCC 40640), which encoded the entire alpha2 sequence. A probe based on the C-terminal region of pCh31-1 was used obtain clone pCh34-1 (ATCC 40640), encoding the C-terminal portion of alpha1. The cDNA clones can be used as probes to identify further ABBP subunits, and in the recombinant prodn. of ABBP
1269 CTGCACGGGGGAAACCCCCCGAGGGGGACTTGGCCAAGATCCTGGAGGGGGGCTC
                                                                                      GlnPheileThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSerAspTrp
                                                                                                                                       LysPheAlaAlaMetValValAspArgPheCysLeuPheValPheThrLeuPheThrIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New isolated neuronal alpha-bungaro-toxin-binding protein DNA - used screen cholinergic agents and other drugs which may affect ligand binding, ion channel or other activities of the protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein alpha 1; cholinergic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein alphal subunit cDNA.
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|TCCGATTCGGTACCATTGATAGCCCAGTACTTCGCCAGCACCATGATCATCGTGGGCCTC
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1396 1456 ------CCAACAGGAAGAAATCTT------CTGCAC 1336 1094 TTTCTGAGGATGAAGACACCAGGGAAGATAAAGTGCGTCCCGCCTGTCAACATAAACAG 1153 ATTATTGTTGGCCTCTCTGTTGTTGTCACTGTTATCGTTCTACAATACCATCATCACGAT 1033 1214 GGGAACATGCTGTATATT-----GGGTTTCGAGGGCTGGATGGGGTTCACTGCACACCC 1267 432 447 361 -LeuLeu 377 ProProAsnSerThrAlaSerThrGlyAsnLeuGlyProGlyCysSerIlePheArgThr 412 467 AlaAlaMetValValAspArgPheCysLeuPheValPheThrLeuPheThrIleIleAla 487 IleLeuArgMetSerArgProGlyLysLysIleThrArgLysThrIleMetMetAsnThr
||||||||||||||||::: AlaaspileHisGluMetProGlnTrpIleLysSerValPheLeuGlnTrpLeuProTrp -HisGlyProPro 413 AspPheArgArgSerPheValArgProSerThrMetGluAspValGlyGlyGlyLeuGly ----ArgGluLeuHisLeuIleLeuArgGluLeuGlnPhe 11eThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSerAspTrpLysPhe mutant; Mutant human alpha7 ligand gated ion channel coding sequence ACCACTGATTCAGGGGTGATCTGTGGGAGGATG-----ACCTGTTCA-Human, alpha7 nicotinic acetylcholine gated ion channel, 5-hydroxytryptamine; 5-HT3; calcium ion conductance; ss. ArgMetArgGluLeuGluLeuLysGluArgSerSerLysSer---||||::: :::|||:::||||||||||||||| ACAATIGGCATCTTTGTA 1552 ThrValAlaValLeuLeuSerAlaProHisIleIle 499

cell lines to conduct calcium ions, comprising specified concentrations of ions of sodium, calcium and potassium at specified pH.

Claim 50; Page 69; 77pp; English.

The present sequence is the coding sequence for a mutant human alpha7 nicotinic acetylcholine gated ion channel. The human alpha7 ion channel was used in the construction of an alpha7/5-hydroxytryptamine (5-HT3) chimeric ligand gated ion channel (see AAG90382 and AAB50014). The alpha7/5-HT3 chimeric ion channel can be expressed by recombinant cells in the present invention, resulting in preferential calcium ion conductance by the cells. The protein encoded by this sequence has the wild-type threonine residue at position 230 substituted by a proline residue

Sequence 1509 BP; 296 A; 452 C; 429 G; 332 T; 0 U; 0 Other;

Alignment Scores:			
Pred. No.:	6.42e-124	Length:	1509
Score:	1252.50	Matches:	249
Percent Similarity:	63.04%	Conservative:	75
Best Local Similarity:	48.44%	Mismatches:	139
Query Match:	47.448	Indels:	51
DB:	4	Gaps:	7

US-09-303-232-6 (1-501) x AAC90385 (1-1509)

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27 27 88 88 88 47 148 67	LeuAlaLeuLeuAlaLeuLeuProValSerGluGlnGlyProHisGluLysArgLeu 26
87 268 107 328 127	AsnaspSerGluTyrGlyGalLysAspLeuArgIleThrProAsnLysLeuTrplys 106
147 448 167 508	CyslysMetAspllealaTrpPheProPheAspAspGlnHiscysAspMetLysPheGly 166
187 559 207 619	LeuserAspPheileThrAsnGlyGluTrpTyrLeuileGlyMetProGlyLysLysAsn 206 ::: ::: ArcAGrGccranTccccArtcsAcArtcsGaCcranGrGGAATCCCCGGCAACAGGGGT 619 ThrIleThrTyrAlaCysCysProGluProTyrValAspValThrPheThrIleMetile 226

qu	619	CGCCGCAGGCCGCTCTACTATGGCCTCAACCTGCTGATCCCCTGTGTGCTCATCTCCGCC 738
٥y	247	MetAlaLeuLeuGlyPheThrLeuProProAspSerGlyGluLysLeuThrLeuGlyVal 266
Ωp	739	CTCGCCCTGCTGCTTCCTGCTTCCTGCAGATTCCGGGGGGAGAAGATTTCCCTGGGGGATA 798
٥٨	267	ThrileLeuLeuSerLeuThrValPheLeuAsnLeuValAlaGluThrLeuProGlnVal 286
дg	799	ACAGTCTTACTCTCTCTTACCGTCTTCATGCTTCGTCGTCGTCGTGAGATCATGCCCGCAACA 858
ολ	287	SerAspAlaIleProLeuLeuGlyThrTyrPheAsnCysIleMetPheMetValAlaSer 306
qu	859	TCCGATTCGGTACCATTGATAGCCCAGTACTTCGCCAGCACCATGATCATCGTGGGCCTC 918
οy	307	SerValValLeuThrValValValLeuAsnTyrHisHisArgThrAlaAsp11eHisGlu 326
QC	919	TCGGTGGTGGTGACGGGGGGGGGCGGGGGGGGGGGGGGG
λ̈́o	327	MetProGlnTrpIleLysSerValPheLeuGlnTrpLeuProTrpIleLeuArgMetSer 346
qq	979	ATGCCCAAGTGGACCAGAGTCATCTTCTGAACTGGTGCGCGTGGTTCCTGCGAATGAAG 1038
ογ	347	ArgProGlyLysLysIleThrArgLysThrIleMetMetAsnThrArgMetArgGluLeu 366
qq	1039	-0
٥٨	367	GluLeuLysGluArgSerSerLysSerLeuLeuAlaAsnValLeuAsplleAspAspAsp 386
ΩD	1099	GCCAGTGTGGAGATGAGCGCCGTGGCG
Qy	387	PheArgHisGlyProProProAsnSerThrAlaSerThrGlyAsnLeu 403
Ωp	1126	CCGCCGCCCGCCAGCAACGGGAACCTGCTGTACATC 1161
Qy	404	GlyProGlyCys 407
qq	1162	GGCTTCCGCGGCCTGGACGGCGTGCACTGTCCCGACCCCCGACTCTGGGGTAGTGTGT 1221
٥٧	408	SerIlePheArgThrAspPheArgArgSerPheValArgProSerThrMetGluAspVal 427
qq	1222	GGC
δλ	428	GlyGlyGlyLeuGlySerHisHisArgGluLeuHisLeuIleLeuArgGluLeu 445
qq	1261	CTGCACGGCGGCAACCCCCCGAGGGGACCCCGGACTTGGCCAAGGATCCTGGAGGAGGTC 1320
Qy	446	GlnPheIleThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSerAspTrp 465
qq	1321	GCTACATTGCCAATGCTTCCGCTGCCAGGACGAAGCGAGGCGAGTCTGCAGCGAGTGG 1380
٥y	466	LysPheAlaAlaMetValValAspArgPheCysLeuPheValPheThrIle 485
qq	1381	AAGTTCGCCGCCTGTGTGGGGCCGCCTGTGCCTTCTGGCCTTCTCGGTCTTCACGTC 1440
٥x	486	IleAlaThrValAlaValLeuLeuSerAlaProHisIleIle 499
qa	1441	ATCHGCACCATCGTGATGTCGGCTCCCAACTTCGTG 1482
Search	Completed	ed: May 8, 2004, 19:30:45

Search completed: May 8, 2004, 19:30:45 Job time : 554.234 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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using sw model OM protein - protein search, May 7, 2004, 11:31:03 ; Search time 12.1919 Seconds (without alignments) 3952.801 Million cell updates/sec Run on:

US-09-303-232-6 2640 1 MAPWILAALALLAVSEQG......IFTIIATVAVLLSAPHIIVQ 501 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

Searched:

283366 Total number of hits satisfying chosen parameters:

283366 seqs, 96191526 residues

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database

PIR 78:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	nicotinic acetylch		nicotinic acetylch	alpha 7 neuronál n	nicotinic receptor	nicotinic acetylch	alpha-bungarotōxin	hypothetical prote			യ	nicotinic acetylch		nicotinic acetylch		nicotinic acetylch	nicotinic acetylch		probable nicotinic	nicotinic acetylch									
	Des	nic	nic	njo	alp	nic	nic	alp	hyp	hy	Lyd Lyd	nii	nic	ace	nic	nic	nic	nic	nic	nic	nic	nic	nic	nic	pro	nic	nic	nic	nic	nic
SUMMARIES		17	75	33	69	8,	38	5	7.1	22	2	99	0.1	61	27	ជ	<u>ه</u>	72	68	N	4.	0.	6	Τ.	12	Ti.	뒥	Z	4,	1,
SI	ΩI		A57175	JN0113	G02259	T01378	268588	JH0173	T25671	T19862	T19622	A53956	A37040	860589	A24572	ACFFA1	\$12359	ACFFA2	T09289	ACCH2N	B37014	A40110	S12899	B35721	A30992	ACBOA1	ACHUA1	ACFFNN	JH0174	JC402
	DB		7	7	7	7	7	7	7	~	7	7	7	~	7	Н	~	Н	7	Н	7	7	7	7	~	Н	Н	Н	~	7
	Length	502	502	502	502	502	498	511	461	542	260	503	502	495	499	567	557	576	494	528	512	511	200	495	517	457	5	3	503	0
de	Query Match	47.7	47.6	47.5	۲.	47.2	46.9	46.5	42.9	41.0	40.9	37.5	37.2	36.8	36.8	36.5	35.8	35.7	35.2	35.0	34.8	34.8	41	34.5	34.3	34.3	34.3	34.1		34.0
	Score	1260	1255.5	1253	1252.5	1246.5	1237.5	1226.5	1132	1083.5	1081	686	982.5	970.5	970.5	964.5	944	943	929.2	924.5	919.5	919	910	909.5	906.5	906	905	106	006	897.5
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9

Query Match

47.7%; Score 1260; DB 1; Length 502;
Best Local Similarity 48.5%; Pred. No. 2.9e-99;
Matches 247; Conservative 75; Mismatches 137; Indels 50; Gaps

896 33.9 456 1 ACCHAN 891 33.9 456 2 2 510505 891 33.9 622 2 510505 890 33.7 457 2 513872 898 33.6 625 2 A3218 885.5 33.5 459 2 G02421 885.5 33.5 459 2 G02421 881.5 33.5 445 2 I49458 881 33.4 491 1 ACCHNN 875.5 33.2 461 1 ACCHNN 875.5 33.2 461 1 ACCHNN 875.5 33.2 457 2 A28529 869.5 32.2 457 2 S08162
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ALIGNMENTS

RESULT 1 ACHUA7 nicotinic acetylcholine receptor alpha-7 chain precursor, neuronal - human N;Alternate names: cholinergic nicotinate receptor alpha-7 chain
C.Species: Homo sapiens (man) C.Sale: 12-Aug-1996 #sequence_revision 31-Jan-1997 #text_change 22-Jun-1999 C.Accession: 137185; A54194; S60309 R.Peng, X.; Katz, M.; Gerzanich, V.; Anand, R.; Lindstrom, J.
MOI. PRAKMACOL. 45, 546-554, 1994 A;Title: Human alpha 7 acctylcholine receptor: cloning of the alpha 7 subunit from the \$ omers expressed in Xenopus cocytes.
A;Reference number: 137185; MUID:94195283; PMID:8145738 A;Accession: 137185
A;Status: translated from GB/EMBL/DDBJ A;Molecule type: mRNA A;Residues: 1-502 <prn></prn>
A,Cross-references: EMBL:X70297; NID:q496606; PIDN:CAA49778.1; PID:g496607 A,Experimental source: brain neuroblastoma cell line SHSY-5X
R;Chini, B.; Raimond, E.; Elgoyhen, A.B.; Moralli, D.; Balzaretti, M.; Heinemann, S. Genomics 19. 379-381. 1994
A,Title: Molecular cloning and chromosomal localization of the human alpha-7-nicotinic) A,Reference number: A54194; MUID:94245214; PMID:8188270
A;Accession: A54194 A;Molecule type: mRNA
A;Residues: 24-363,'S',365-374,'A',376-408,'AWPAP',414-502 <chi> A;Cross-references: GB:Z23141; NID:q457736; PIDN:CAA80672.1; PID:q457737</chi>
A;Experimental source: retina C;Comment: This acetylcholine receptor is blocked by alpha-bungarotoxin and is localized
)
A; Cross-references: GDB:138751; OMIM:118511
A;Map position: 15q14-15q14 A;Note: defects in this gene have been associated with mental retardation and schizophre
C;Complex: the functional receptor molecule is a heteropentamer with two alpha chains ar C;Superfamily: acetylcholine receptor
C; Keywords: brain; glycoprotein; heteropentamer; ion channel; neurotransmitter receptor; R:1-23/Domain; eignal commande #ctation prodicted force.
F:24-502/Product: nicotinic acetylcholine receptor alpha-7 chain, neuronal #status predi
F;231-254/Domain: transmembrane #status predicted <tr1> F;262-280/Domain: transmembrane #status predicted <tr2></tr2></tr1>
F;296-317/Domain: transmembrane #status predicted <tr3> F:470-488/Domain: transmembrane #status predicted <tr3.< td=""></tr3.<></tr3>
F;46,90,133/Binding site: carbohydrate (Asn) (covalent) #status predicted
<pre>k;150-164/Disulfide bonds: #status predicted F;365,413/Binding site: phosphate (Ser) (covalent) #status predicted</pre>
F;415/Binding site: phosphate (Thr) (covalent) #status predicted F;442/Binding site: phosphate (Tyr) (covalent) #status predicted

```
nicotinic acetylcholine receptor alpha-7 chain precursor, neuronal - chicken
N;Alternate names: alpha-bungarotoxin-binding protein alpha chain
(S;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Date: 12-Feb-1993 #sequence revision 12-Feb-1993 #text_change 20-Aug-1999
C;Accession: JN0113; JH0172; $28018; B25738; $26566
E;Couturier, S.; Bertrand, D.; Matter, J.M.; Hernandez, M.C.; Bertrand, S.; Millar, N.;
Neuron 5, 847-856, 1990
A;Title: A neuronal nicotinic acetylcholine receptor subunit (alpha 7) is developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,Accesion: JN0113
A,Molecule type: DNA
A,Receion: JN0113
A,Molecule type: DNA
A,Reference number: JN0172; MUID: 90315158; PIDN: CAA48576.1; PID: g287757
A,Experimental source: white leghorn; brain
R,Schoepfer, R.; Conroy, W.G.; Whiting, P.; Gore, M.; Lindstrom, J.
Neuron 5, 35-48, 1990
A,Tele: Brain alpha-bungarctoxin binding protein cDNAs and MAbs reveal subtypes of thi A,Reference number: JN0172; MUID: 90315158; PMID: 2369519
A,Accession: JH0172
A,Molecule type: MRA
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A,Cross-references: ERBL: X52295; NID: g63077; PIDN: CAA36543.1; PID: g63078
A,Residues: 1-502 <SCHA
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A,Accession: S28018
A,Residues: L-18 & MASS
A,Residues: R-18 & MASS
A,Residues: R-
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                                  423 GTHPSDGDP------DLAKILEEVRYIANRFRCQDESEVICSEWKFAACVUDRLCL
QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN
                                                                                                                     VVVRSGGSCLYVPPGIFKSTCKMDIAWPPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                                                                                     LSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS
                                                                                                                                                                                                                                                                                                                                                                   247 MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         307 SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           367 ELKERSS----KSLLANVLDIDDDFR-----HGPPPPNSTASTGNLGPGCSIFRTDFRRS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFCL
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A;Molecule type: mRNA
A;Cross-references: GB:L37663; MID:g790853; PIDN:AAC42053.1; PID:g790854
C;Superfamily: acetylcholine receptor
C;Keywords: brain; glycoprotein; ion channel; neurotransmitter receptor; phosphoprotein;
C;Keywords: brain; glycoprotein; ion reduced <ST2-254/Domain: signal sequence #status predicted <IR1>
F;24-502/Product: nicotinic acetylcholine receptor alpha-7 chain, neuronal #status predicted <IR2>
F;24-280/Domain: transmembrane #status predicted <IR2>
F;26-280/Domain: transmembrane #status predicted <IR2>
F;470-488/Domain: transmembrane #status predicted <IR3>
F;46,90,133/Binding site: carbohydrate (Asn) (covalent) #status predicted
F;455/Binding site: phosphate (Thr) (covalent) #status predicted
F;415/Binding site: phosphate (Tyr) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nicotinic acetylcholine receptor alpha-7 chain precursor, neuronal - mouse c; Species: Mus musculus (house mouse)
C; Species: Mus musculus (house mouse)
C; Date: 05-Jan-1996 #sequence_revision 05-Jan-1996 #text_change 20-Aug-1999
C; Accession: A57175
Growing about M.F.; Baldini, A.; Beaudet, A.L.
Genomics 26, 399-402, 1995
A; Pitle: Cloning and mapping of the mouse alpha7-neuronal nicotinic acetylcholine recept A; Reference number: A57175; MUID:95324936; PMID:7601470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
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                                                                                                                              NIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTNVVVRS 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99
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                                                               74
                                                                                                                                                                                                                                                                                                                                                                                                            192 PNGEWDLVGIPGKRSERFYECCKEPYPDVTFTVTMRRRTLYYGLNLLIPCVLISALALLV
                                                                                                                                                                              NIWLOMSWIDHYLOWNVSEYPGVKIVRFPDGQIWKPDILLYNSADERFDAIFHINVLVNS
                                                                                                                                                                                                                                                                                                                                                                         TNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISSMALLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 312 VVVLNYHHRTADIHEMPQWIKSVFLQWLPWILKMSRPGKKITRKTIMMNTRMRELELKER
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                                      SLIHVSLQGEFORKLYKELVKNYNPLERPVANDSQPLTVYFSLSLLQIMDVDEKNQVLTT
                                                                                                                                                                                                                                                    GGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGDLSDFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FLLPADSGEKISLGITVLLSLTVFMLLVAEIMPATSDSVPLIAQYFASTMIIVGLSVVVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   372 SAV-----GPPP----ASNGNLLYIGFRGLDGVHCVPTPDSGVVCG----
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         ALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEKNQLLIT
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A; Experimental source: brain
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C;Comment: This acetylcholine receptor is blocked by alpha-bungarotoxin and is localized G;Genetics:
C;Genetics:
C;Genetic
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48.8%; Pred. No. 1.1e-98;
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Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: Rattus norvegicus (Norway rat)
Cispecies: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 21-Jul-2000
Cispeciesion: T01378
Risequela, P.; Madiche, J.; Dineley-Miller, K.; Dani, J.A.; Patrick, J.W.
J. Neurosci. 13, 596-604, 1993
A;Fitle: Molecular cloning, functional properties, and distribution of rat b
A;Reference number: 214310; MUID:93147931; PMID:7678857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:95705903
                                                                                                                                                                                       LALLA-LLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEKN
                                                                                                        QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN
                                                                                                                                                                                                                                               VVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                                                                                                                                                                                                                                                              LSDF1TNGEWYL1GMPGKKNT1TYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ASVEMSAVA-------PPP---ASNGNLLYIGFRGLDGVHCVPTPDSGVVC
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                                        Gaps
                                        51;
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  502
    Length
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    7
                   .3e-98;
es 140;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   47.2%; Score 1246.5; DB 49.4%; Pred. No. 4.1e-98; iive 78; Mismatches 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNL
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A,Status: preliminary; translated from GB/EMBL/DDBJ
A,Molecule type: mRNA
A,Residues: 1-502 <SEG>
47.4%; Score 1252.5;
48.4%; Pred. No. 1.3e
iive 74; Mismatches
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Oy 187 LSDFITNGEWYLIGMPCKKNTITYACCPEPYVDVTFILMIRRRTLYYFRULIVPCVLISS 246 187 ISSYIPNGEWDLMGIPGKRNEKFYECCKEPYPDVTYTVTMRRRTLYYGLNLLIPCVLISA 246	91	Qy 359 Db 360	<pre>MITEMBELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCS 408 </pre>
QY 247 MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVAS 306	9 90	Qy 409 Db 413	JERTDFRRSFVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEBAELIS 463
QY 307 SVVLTVVVLNYHRTADIHEMPOMIKSVFLQMLPWILRMSRPGKKITRKTIMMNTRMREL 366	<u>ب</u> ب	Oy 464 Db 462	DWKFAAMVVDRFCLFVFTLFTIIATVAVLLSÄPHII 499
QY 367 BLKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRTDFRRS 417 Db 367 ASVELSAGAGPPTSNGNLLYIGFRGLEGMHCAPTPDSGVVCGRLACSPTHDEHLMH 422	7 2	RESULT 7 JH0173	
QY 418 FVRPSTMEDVGGGLGSHHRELHLILRELQPITARMKKADEBAELISDWKFAAMVVDRFCL 477 Db 423 GAHPSDGDPDLAKILEEVRYIANRNRCQDESEVICSEWKFAACVVDPLCL 472	£ 2	alpha-bungarotoxin- C;Species: Gallus g: C;Date: 31-Dec-1991 C;Accession: JH0173	binding protein alpha allus (chicken) #sequence_revision (
QY 478 FVFTLFTIIATVAVLLSAPHII 499 Db 473 MAFSVFTICTIGILMSAPNFV 494		R;Schoepfer, Neuron 5, 35- A;Title: Brai A;Reference r	R;Schoepfer, R.; Conroy, W.G.; Whiting, P.; Gore, M.; Lindstrom, J. Meuron 5, 35-48, 1990 A;Title: Brain alpha-bungarotoxin binding protein cDNAs and MAbs reveal subtypes of thi A;Reference number: JH0172; MUID:90315158; PMID:2369519
RESULT 6 S68588 nicotinic acetylcholine receptor alpha-1 chain precursor (clone Ce21) - Caenorha C.Species: Caenorhabditis elegans C.Date: 06-Dec-1996 #sequence revision 07-Feb-1997 #Fext change 20-lun-1999	Caenorhabditis e	A,Accession: JHU1/3 A,Molecule type: mRN A,Residues: 1-511 <sch> A,Cross-references: GB: A,Experimental source: A,Note: this sequence i</sch>	A; Accession: July; 3 A; Molecule type: mRNA A; Residues: 1-511 <sch> A; Residues: 1-511 <sch> A; Esperances: GB:X52296; NID:g63081; PIDN:CAA36544.1; PID:g63082 A; Experimental source: brain A; Experimental source: brain A; Note: this sequence is similar to acetylcholine receptor alpha chains C; Commant: Alpha phungarchovin binding mortains are localized to corrections.</sch></sch>
C;Accession: S68588; S57496 R;Ballivet, M.; Alliod, C.; Bertrand, S.; Bertrand, D. J. Mol. Biol. 258, 261-269, 1996 A;Title: Nicotinic acetylcholine receptors in the nematode Caenorhabditis elegan	gans.	C; Superfamily C; Keywords: F; 1-30/Domair F; 31-510/Prod	ptor mbrane protein status predicted <sig> ixin binding protein alpha-2 chain #status pre</sig>
A.Accession: 568588 A.Status: nucleic acid sequence not shown A.Molecule type: mRNA A.Festiduss: 1-498 https://doi.or/		F;239-262/Domain: F;270-288/Domain: F;304-323/Domain: F;479-496/Domain: F;54/Binding site:	hain: transmembrane #Status predicted <tml> adin: transmembrane #Status predicted <tm2> hain: transmembrane #Status predicted <tm3> hain: transmembrane #Status predicted <tm3> site: carbohvdrate (Asn) (covalent) #status predicted</tm3></tm3></tm2></tml>
A;Cross-references: EMBL:X83887; NID:9872087; PIDN:CAA58764.1; PID:9872088 C;Superfamily: acetylcholine receptor C;Superfamily: acetylcholine receptor C;Reywords: glycoprotein; ion channel; neurotransmitter receptor; postsynaptic n F;1-19/Domain: signal sequence #status predicted <sig> F;20-498/Product: nicotinic acetylcholine receptor alpha-1 chain #status predict</sig>	tic membrane;	Query Match Best Local Matches 24	darity 46.5%; Score 1226.5; DB 2; I larity 46.6%; Pred. No. 2.1e-96; Conservative 75; Mismatches 134; Ir
Query Match 46.9%; Score 1237.5; DB 2; Length 498; Best Local Similarity 47.5%; Pred. No. 2.4e-97; Matches 245; Conservative 80; Mismatches 140; Indels 51: Gans 9;	·	Oy 5	5 LAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQOIIDVDE 64
MLAALALLALLEVSEQGPHEKRLINALLANYNTLERPVANESEPLEVREGLTLQQIID 61		Qy 65 Db 76	KNQLLITNIMLSLEMNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQ 124
QY 62 VDEKNQLLITNIWLSLEWNDYNLRWNDSEXGGYKDLRITPNKLWKPDVLMYNSADEGFDG 121	d =	Oy 125 Db 136	S TNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAG 184 :
TYQINVVVRSGGSCLYVPPGIFKSTCKMDIAMFPFDDQHCDMKFGSWTYDGNQLDLVLKD	1 11 6	Oy 185 Db 193	GDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVFFIIMIRRRTLYYFFNLIVPCVLI 244 : ::
OY 182 BAGG-DLSDFITNGEWYLIGMPCKKNTITYACCPEPYVDVTFTIMIRRTLYYFFNLIVP 240 Db 180 ATGGFDISEYISNGEWALPLITVERNEKFYDCCPEPYPDVHFYLHMRRRTLYGFNLIMP 239	· ·	Qy 245 Db 253	SSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMV 304 :
Qy 241 CVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCI 300 -			ASSVULTVVVLNYHRTADIHEMPQWIKSVFLQWLPWILEMSRPGKKITRKTIMMNTRMR
OY 301 MFMVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQMLPWILRMSRPGKKITRKTIM 358		Qy 365	; ELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIF 410

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Db	362 PLSCKYSYPKHPPSLKNTEMNVLPGHQPSNGNMIYSYHTMENPCC 406	RESITT 9
Qy Dp	411 RTDFRRSFVRPSTMEDVGGGLGSHHRELHLILRELQFITAR 451	T19862 hypothetical prote C;Species: Caenorh
λ 2 2 2 3	452 MKKADEBAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHII 499 : : :	C;Date: 15-Oct-199 C;Accession: T1986 C;Hembry, C. R;Hembry, C. Submitted to the E A;Reference number
RESULT 8 T25671 hypothet	ical protein D2092.3 - Caenorhabditis elegans	A,Accession: T1986 A,Status: prelimin A,Molecule type: DA,Residues: 1-542
C; Specie C; Date: C; Access	is: Caenorhabditis elegans 115-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 21-Jan-2000 iion: 125671	A)Cross-references A)Experimental sou
R; Gattun Submitte A; Descri	Rigatiung, S.; Maggi, L. submary, February 1997 Submitted to the EMBL Data Library, February 1997 A; Description: The sequence of C. elegans cosmid D2092.	A.Gene: CESP:C40C9 A.Map position: X A.Introns: 11/3; 6 C.Superfamily: ace
A;Access A;Status A;Molecu A;Residu	10n: 1256/1 : preliminary; translated from GB/EMBL/DDBJ le type: DNA es: 1-461 <gat></gat>	Query Match Best Local Simil Matches 232; C
A; Cross-A; Experi	references: EMBL:U88167; PIDN:AAB42223.1; GSPDB:GN0019; CESP:D2092.3 mental source: strain Bristol N2; clone D2092 GS:	QY 10 LLAL
A;Gene: A;Map po A;Intron	CESP:D2092.3 sition: 1 s: 36/1; 80/3; 119/2; 191/1; 243/1; 274/1; 303/1; 382/2	Db 17 LFHL Qy 70 ITNI
C;Superf	amily: acetylcholine receptor	Db 77 TLVA
Query Match Best Local S Matches 216	Match .ocal Similarity 44.7%; Pred. No. 2.1e-88; s 216; Conservative 86; Mismatches 127; Indels 54; Gaps 6;	Qy 128 VVRS
ò	EXELINALLANYNTLERPVANESEPLEVREGLTLOOIIDVDEKNOLLITNIMLSLEWNDY 82	Db 137 VVSY
a do	:	188
λō	NIRWNDSEYGGVKDLRI TPNKLWKDDVLMYNSADBGFDGTVQTNVVVRSGGSCLXVP	QY 241 CVLI
Д	KLQWEPKKYGGIQDIRFPGSSDHIWKPDVLLYNSAAEDFDSTFKSNLLTYHTGTVVWIPP	 DD 255 SFLI
s S	141 GIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGDLSDFITNGEW 196 146 GVLKPVCQLDVTWFPFDDQVCEMKFGSWTYAIDLQIDDDTMGTOSMDLSTYLVNGEW 205	QY 295 TYFN
À	YLIGMPGKKNTITYACCPEPYUDVTFTIMIRRRTLYYFFNLIVPCVLISSMALLGFTLPP	Db 315 AFFS
qq	: : : :	355
à à	DSGEKLTLGVTILLSLTVELNLVAETLEQVSDAIPLLGTYFNCIMFWYASSVVLTVVVLN	2y 413
2 2		Db 417 IKLG
ž £		Qy 439 HLIL
ìò	LANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRTRSFVRPSTMEDVGGGLGSHHR	Db 477 CLEL
Db	364 -ANVIDSTDKMPKKPKNPLDCNLPSNHAGYEAQIL 397	495
ò	437 ELHLIERELQFITARMKKADEEAELISDWKFAAMVVDRFCLFVFTLFTITATVAVLLSAP 496	Db 537 SPHL
Db	398 LLHSVHTELRRVVAFYNKEEHDERIQTDWRFAAMVVDRACLLLFTVFIVISILAIMMSAP 457	RESULT 10
cy Dp	497 HII 499 458 HII 460	hypothetical prote C,Species: Caenorh C,Date: 15-Oct-199

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69/3; 123/2; 173/3; 216/1; 248/1; 279/1; 314/1; 350/3; 430/1; 464/1; 44:etylcholine receptor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YTGDVLQVPPGILKLSCKIDITYPPFDDQICHLKFGSWTYSGNFIDLRINGPEGKNI 196
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ss: EMBL:Z70266, PIDN:CAA94206.1, GSPDB:GN00028, CESP:C40C9.2 ource: clone C40C9
cein C40C9.2 - Caenoxhabditis elegans
habditis elegans
1999 #sequence_revision 15-Oct-1999 #text_change 18-Feb-2000
862
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C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 21-Jan-2000
C;Accession: T19622
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41.0%; Score 1083.5; DB 2; Length 542;
larity 42.6%; Pred. No. 3.5e-84;
Conservative 86; Mismatches 152; Indels 75;
                                                                                                                                                                                                                                nary; translated from GB/EMBL/DDBJ
                                                                                                                                             EMBL Data Library, March 1996
:r: Z19188
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S;Mihovilovic, M.; Roses A.D.
Exp. Neurol. 111, 175-180, 1991
A;Title: Expression of mRNAs in human thymus coding for the alpha3 subunit of a A;Reference number: A53956; MUD:91114756; PMID:198986
A;Accession: A53956
A;Status: preliminary
A;Nolecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----LPTT--QMNGALDSSINKYTCTKVTRPLENGSATINHKSSPQINPINNNIYKCAN 487
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                                                                                      A;Cross-references: EMBL:Z93778; PIDN:CAB07843.1; GSPDB:GN00019; CESP:C31H5.3
A;Experimental source: clone C31H5
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nicotinic acetylcholine receptor alpha-3 chain precursor, neuronal - human C;Species: Homo sapiens (man)
C;Date: 07-0ct_1994 #sequence_revision 07-0ct-1994 #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                               20 GPHEKRILINALLANYNTLERPVANESEPLEVRFGLTLOOIIDVDEKNOLLITNIWLSLEW
                                                                                                                                                                                                                                                                                                                   80 NDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTNVVVRSGGSCLYVP
                                                                                                                                                                                                                                                                                                                                                                           PGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGDLSDFITNGEWYLI
                                                                                                                                                                                                                                                                                                                                                                                                                                  200 GMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISSMALLGFTLPPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EKLTLGVT1LLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVASSVVLTVVVLNYHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --DDFRHGPPPPNSTAST--GNLGPGCSIFRTDFR
                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                  92;
                                                                                                                                                                                                        Length 560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385 ILTRPNGNGHSAVDKAVHLDLSTGNPHSDAKKSSPSPKRTSASIMGMTG-
                                                                                                                              A;Gene: CESP:C31H5.3
A;Map position: 1
A;Introns: 24/1; 70/3; 139/2; 270/1; 299/1; 336/3; 372/2; 456/3
C;Superfamily: acetylcholine receptor
                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                      Score 1081; DB 2;
Pred. No. 6e-84;
8; Mismatches 155;
                                            A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-560 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320 RTADIHE-MPQWIKSVFLOWLPWILRMSRP---
submitted to the EMBL Data Library, April 1997
A;Reference number: Z19153
A;Accession: T19622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELELKERSSKSLLANVLDID----
                                                                                                                                                                                                                                  88;
                                                                                                                                                                                                      40.9%;
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                                                                                                                                                                                                                    Jarity 39.4%;
Conservative
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TAIISYNAPHLEV 560
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Best Local Simi
Matches 218;
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A/CRSETERE GENERAL STANDARY SELS NID: 9189252; PIDN: AAA59942.1; PID: 9189253
R; Anand, R.; Lindstrom, J.
Brinand, R.; Lindstrom, J.
Brinand Reference number: 82138
A; Residues: J0-503 < ANA>
A; Residues: J0-503 < ANA>
A; Residues: BMBL:X53559; NID: 934985; PIDN: CAA37625.1; PID: 934986
C; Genetics: A; Gene: GDB: L25219; OMIM: 118503
A; Cross-references: GDB: L25219; OMIM: 118503
A; Map position: 15q24-15q24
C; Superfamily: acetylcholine receptor
C; Keywords: neurotransmitter receptor
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nicotinic acetylcholine receptor alpha-3 chain precursor, neuronal (version 2)
c)species: Wall-1992 #sequence_revision 17-Jul-1992 #text_change 21-Jul-2000
C;Species: 17-Jul-1992 #sequence_revision 17-Jul-1992 #text_change 21-Jul-2000
C;Accession: A37040; S24595
C;Accession: A37040; B.; Tarroni, P.; Clementi, F.
Neurosci. Lett. 111, 351-356, 1990
A;Title: Molecular cloning of human neuronal nicotinic receptor alpha-3-subunit
A;Reference number: A37040; MUID:90245296; PMID:2336208
A;Accession: A37040
A;Accession: A37040
A;Accession: B37040
A;Residues: 1-502 <FOR>
A;Cross-references: EMBL:X52239; NID:9177897; PIDN:AAC84176.1; PID:g177898
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 GTYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLK 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 MFMVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMN 360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              191 G-SSMNLKDYWESGEWAIIKAPGYKHDIKYNCCEBIYPDITYSLYIRRLPLFYTINLIIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MAPMLAALALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQII
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 TRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNL----GPGCS----
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nicotinic acetylcholine receptor alpha-3 chain precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Unn-1888 #sequence_revision 30-Jun-1988 #text_change 08-Nov-1996
C;Date: 30-Unn-1888 #sequence_revision 30-Jun-1988 #text_change 08-Nov-1996
C;Gocession: A24572
R;Boulter, U.; Evans, K.; Goldman, D.; Martin, G.; Treco, D.; Heinemann, S.; Patrick, J
Nature 319, 368-374, 1986
A;Title: Isolation of a cDNA clone coding for a possible neural nicotinic acetylcholine
A;Aceference number: A24572
A;Accession: A24572
A;Accession: A24572
A;Accession: A24572
A;Accession: A24572
A;Accession: A24572
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(Superfamily: acetylcholine receptor

(Skywords: glycoprotein; ion channel; neurotransmitter receptor; postsynaptic membrane

(Stykords: signal sequence #status predicted <SIG>

F):25/Domain: signal sequence #status predicted <SIG>

F):26-499/Product: nicotinic acetylcholine receptor alpha chain #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                    304
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                                                                                                                                                                            GDLSDFIINGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRILYYFFNLIVPCVLI 244
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                                                               VRPSTMEDVGG--GLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFC 476
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                                  KNQLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305 ASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGK---KITRKTIMMNT 361
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                                                                                                                                                                                                                                                                                                                                                                 SSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFR---TDFRRSF
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LWVFILVCILGTAGLFL 486
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Matches 199; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISSM 247
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Cispecies: 27-Apr-1996 #sequence_revision 13-Mar-1997 #text_change 20-Aug-1999
Cispecies: S60se in a sequence_revision 13-Mar-1997 #text_change 20-Aug-1999
Richado, M.; Alamo, L.; Navarro, A.
Neurochem. Res. 17, 281-287, 1992
A;Title: Primary structure of an agonist binding subunit of the nicotinic ac A;Reference number: 860589; MUID:92319195; PMID:1620271
A;Accession: 860589
A;Accession: 860589
A;Accession: 1495 - CRIP
A;Molecule type: mRNA
A;Residues: 1499 - CRIP
A;Accessidues: Acrib - CRIP
A;Access
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C;Superfamily: acetylcholine receptor
C;Keywords: neurotransmitter receptor
C;Keywords: neurotransmitter receptor
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-495/Product: acetylcholine receptor alpha chain #status predicted <MAJ
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C;Superfamily: acetylcholine receptor
C;Keywords: neurotransmitter receptor; transmembrane protein
F;1-20/Domain: signal sequence #status predicted <SIG>
F;29-502/Product: nicotinic acetylcholine receptor alpha-3 chain #status
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                                                                                                                                            2; Length
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                                                                                                                                       Score 982.5; DB 2 Pred. No. 1.3e-75;
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38.9%;
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193 NGEWYLIGMEGKKNTITYACCPEPY/DVTFTIMIRRRILYEFNLIVPCVLISSMALLGF 252 193 NGEWYLIGMEGKKNTITYACCPEPY/DVTFTIMIRRRILYEFYLINDECVLISSMALLGF 262 1	Oy 437 ELHLILRELOFITARWKKADEEAELISDWKFAAMVUDRFCLEVFTLFTIIATVAVILSAP 496	
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Db 248 LISFLTVLFYLPSDCGEKVILCISVLLSLTVFILVITETIPSTSLVIPLIGEYLLFTMI 307 Qy 303 MVASSVVLTVVVLNYHHRTADIHEMPOMIKSVFLOWLEMILRWSRPGKKITRKT-IMM 359 Db 308 FVILSIVITVPVLNYHYRTPTTHTMPTWVKSVFLOWLEMPRIRRPTSGEGDTPKRTFY 367 Qy 360 NTRMRELELKERSSKELANVLDIDDDFRHGPPPNGTASTGNLGPGCSIFRT 412 Db 368 GAELSNLNCFSRCRLQXLQSRLPIDFRWDLWLLPHRRVKISN 408 Qy 413 DFRRSFVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAM 470 Db 409 -FSANLTRSSSSESVNAVLSLSALSPEIKEALQSVKYIAENMKAQNVAKEIQDDWKYVAM 467 Qy 471 VVDRFCLFVFTLFTIIATVAVL 493 Db 468 VIDRIFLWVFILVCILGTAGLFL 490	RESULT 15 ACFR1 Injoctinic acetylcholine receptor alpha-1 chain precursor - fruit fly (Drosophila melanog C.Species Drosophila melanogaster C.Species Drosophila Masquence_revision 31-Dec-1991 #text_change 21-Jun-2002 C.Saccession: S00381; A38801 BAMDO 3.7, 611-618, 1988 A.Title: Conservation of neural micocinic acetylcholine receptors from Drosophila to ver A.Scession: S00381; MUD:88283526; PMID:2840281 A.Scession: S00381; MUD:88283526; PMID:2840281 A.Scession: S00381; MUD:88283526; PMID:2840281 A.Scess-references: GB:X07194; NID:97575; PIDN:CAA30172.1; PID:97576 A.Scess-references: GB:X07194; NID:97575; PIDN:CAA30172.1; PID:97576 A.Scession: A.SSS Drosophila Drosophila Companies Drosophila C.Scession: A.SSS Drosophila C.Scession: A.SSS Drosophila C.SSS Drosoph	Query Match 36.5%; Score 964.5; DB 1; Length 567; Best Local Similarity 36.5%; Pred. No. 5.1e-74; Matches 198; Conservative 95; Mismatches 158; Indels 91; Gaps 9; QY 21 PHEKRILANALLANYNTERPVANESBELEVREGITLQQIIDVDEKNQLLITNIMLSLEWN 80 Db 23 PDAKRLYDDILSNYNRLIRRPVGNNSDRITVKMGLRLSQLIDVNLKNQIMTINNWTGGWN 82 QY 81 DYNLRWNDSEYGGVDLRITPNKLMKPDVLMYNSADEGFGTYQINVVNRSGSCLYVPP 140

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GenCore version 5.1.6
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OM protein - protein search, using sw model

May 7, 2004, 11:18:28 ; Search time 9.35654 Seconds (without alignments) 2788.120 Million cell updates/sec Run on:

Title: Perfect score: Sequence:

US-09-303-232-6 2640 1 MAEMLAALALLPVSEQG......LFTIIATVAVLLSAPHIIVQ 501

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

141681 seqs, 52070155 residues Searched:

141681 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries

SwissProt_42:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	P36544 homo sapien	P49582 mus musculu	P22770 gallus gall	rattus	P54131 bos taurus	P48180 caenorhabdi		7	Q07263 bos taurus	m		ıo	P23414 schistocerc		10	_	01	ın	rattus	1 gallus	rattus	P12392 rattus norv	P25162 drosophila	P02709 bos taurus	P04755 drosophila	P12390 rattus norv	P43681 homo sapien	5	P17787 homo sapien	22	070174 mus musculu		P26153 gallus gall
SUMMARIES	CI	ACH7 HUMAN	ACH7 MOUSE	ACH7_CHICK	ACH7 RAT	ACH7_BOVIN	ACH1 CAEEL	ACH3 HUMAN		ACH3_BOVIN			ACH1 MANSE	ACH1 SCHGR			ACH2_CHICK	ACH2 HUMAN	ACH3_CARAU	ACH2 RAT	ACH6 CHICK	ACH6_RAT	ACHP RAT		ACHA_BOVIN	ACH3 DROME	ACHN RAT	ACH4 HUMAN		ACHN HUMAN	ACH4_CHICK	ACH4 MOUSE	ACHA RAT	ACHP_CHICK
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oko (Query Match	47.7	47.6	47.5	47.2	47.0	46.9	37.5	~	9	36.5	S	S	S	2	വ	35.0	34.9	34.8	34.7	34.7	34.6	•	•	34.3	34.1	4	34.0	33.9	33.9	33.8		33.7	33.7
	Score	1258.5	1255.5	1253	1246.5	1240.5	1237.5	989.5	977.5	970.5	964.5	948.5	946.5	944	943	933	924.5	922.5	919.5	917	915.5	914.5	910.5	908.5	906	006	899.5	897.5	896	895	891	890.5	890	890
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ACHP HUMAN	ACHA CARAU ACHA HUMAN	ACHA_TORMA	ACHN_CHICK	ACHA_TORCA	ACH1_XENLA	ACH8 CAEEL	ACHA_BRARE
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ALIGNMENTS

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SEQUENCE OF 118-129 FROM N.A.
MEDLINE=21818878; PubMed=11829490;
Riley B., Williamson M., Collier D., Wilkie H., Makoff A.;
Riley B., Williamson M., Collier D., Wilkie H., Makoff A.;
"A 3-Mb map of a large segmental duplication overlapping the alpha7-
nicotinic acetylcholine receptor gene (CHRNA7) at human 15q13-q14.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein expression map database.",
Proteomics 2:212-223(2002)
-!- FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                          Helnemann S.F.;
Wholecular cloning and chromosomal localization of the human alpha
nicotinic receptor subunit gene (CHRNA7).";
Genomics 19:379-381(1994).
                                                     Doucette-Stamm L., Monteggia L.M., Donnelly-Roberts D., Wang M.T., Lee J., Tian J., Giordano T., "Cloning and sequence of the human a7 nicotinic acetylcholine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 similarity).
SUBCELLULAR LOCATION: Integral membrane protein.
MASS SPECTROMETRY: NW-54157.68; METHOD-MALDI.
SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                            Herath A.,
Page M.J.,
                                                                                                                                                                                         Chini B., Raimondi E., Elgoyhen A.B., Moralli D., Balzaretti M.,
                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=21829512; PubMed=11840567;
Harris R.A., Yang A., Stein R.C., Lucy K., Brusten L., Herath A. Parekh R., Waterfield M.D., O'Hare M.J., Neville M.A., Page M.J. Zvelebil M.J.;
"Cluster analysis of an extensive human breast cancer cell line
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) 118511; -. GO:0005892; C:nicotinic acetylcholine-gated receptor-chan. GO:0005464; F:acetylcholine receptor activity; TAS. GO:0004899; F:nicotinic acetylcholine-activity; TAS. GO:0000489; F:acctivation of MAPK; TAS. GO:00006810; P:transport; TAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: Forms a homo-oligomeric channel blocked by alpha-bungarotoxin. The structure is probably pentameric (By
Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GO; GO:0000187; r:actrvcccc.
GO; GO:0006810; P:transport; TAS.
InterPro; IPR006029; Neu_channel_memb.
InterPro; IPR006202; Neur_chan_LED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X70297; CAA49778.1; -.
EMBL; U40583; AAA83561.1; -.
EMBL; U62436; AAA40114.1; -.
EMBL; Y08420; CAA69697.1; -.
EMBL; A2385585; AAK6811.1; -.
EMBL; L25827; -; NOT ANNOTATED_CDS.
EMBL; Z23141; CAA86672.1; -.
                                                                                                                                                                          MEDLINE=94245214; PubMed=8188270;
                                                                                                                Drug Dev. Res. 30:252-256(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF332758; AAK19515.1; -. PIR; G02259; G02259.
                                                                                                                                             OF 24-502 FROM N.A.
                            SEQUENCE OF 17-502 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGNC:1960; CHRNA7.
                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR; G02259; G02259
PIR; I37185; ACHUA7
                                                                                                                                                                                                                                                                                                                                                                                  MASS SPECTROMETRY
                                                                                                                                                            TISSUE=Retina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           membrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118511;
                                                                                                                                                                                                     Heinemann S.
                                                                                                                                            SEQUENCE
                                                                                                  receptor
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MIM; 11
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126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              247 MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVAS 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130 VLVNSSGHCQYLPPGIFKSSCYIDVRWFPFDVQHCKLKFGSWSYGGWSLDLQMQE---AD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LALLA-LLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LALAASLLHVSLQGEFQRKLYKELVKNYNPLERPVANDSQPLTVYFSLSLLQIMDVDEKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                367 ASVEMSAVA------PPP---ASNGNLLYIGFRGLDGVHCVPTPDSGVVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIFRIDFRRSFVRPSTMEDV - - GGGLGSHHRELHLILRELQFITARMKKADEEAELISDW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G-----RMACSPTHDEHLLHGGQPPEGDPDLAKILEEVRYIANRFRCQDESEAVCSEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                               POTENTIAL:

ASSOCIATED WITH RECEPTOR ACTIVATION
(BY SIMILARITY).

N-LINEED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

A -> G (IN REF. 1 AND 7).

S -> N (IN REF. 2 AND 6).

S -> P (IN REF. 2 AND 6).

C -> S (IN REF. 8).

A -> G (IN REF. 1).

RMACS -> AND FF. 1).

RMACS -> AND FF. 1).

RMACS -> AND FF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   51;
                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1; Length 502;
InterPro; IPR006201; Neur_channel.
Pfam; PF02931; Neur_chan_lED; 1.
Pfam; PF02932; Neur_chan_lED; 1.
PRINTS; PR00252; NRTONCHÄNNEL.
PRINTS; PR00560; LIC; I.
PROSITE; PS000360; LIC; I.
PROSITE; PS000360; NEUREN ION CHANNEL; 1.
PROSITE; PS00026; NEUROFR ION CHANNEL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  138; Indels
                                                                                                                                                                                        POTENTIAL.
CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                      6.3e-102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHII 499
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                                                                                                                                                                                                                                                                                                                                                                                                                       47.7%; Score 1258.5;
48.6%; Pred. No. 6.3e
iive 75; Mismatches
                                                                                                                                                                             POTENTIAL
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213
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1133
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375
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502 AA;
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                                                                                                                                                  231
262
262
296
318
470
150
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TRANSMEM
TRANSMEM
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                                                                                                                                                                                                                                                                       CARBOHYD
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CONFLICT
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                                                                                                                                                                                                                    TRANSMEM
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BRBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ibs-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
ALPHA-7 CHAIN.
EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and
                                                                                                                                                                              Mus musculus (Mouse).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULĀR LOCATION: Integral membrane protein.
SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                   01-FEB-1996 (Rel. 33, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-7 chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  502;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: Forms a homo-oligomeric channel blocked by alphabungarotoxin. The structure is probably pentameric (By
                                                                                                                                                                                                                                                                                                                                    STRAIN=BALB/c; TISSUB=Brain;
MEDLINE=95524936; PubMed=7601470;
Orr-Urtreger A., Seldin M.F., Baldini A., Beaudet A.L.;
"Cloning and mapping of the mouse alpha 7-neuronal nicotinic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1; Length
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N-LINKED (GLCNAC. . .)
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  502
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MGD; MGI:99779; Chrna7.

InterPro; IPR006029; Neu channel memb
InterPro; IPR006202; Neur chan LBD.

InterPro; IPR006201; Neur chan LBD.

Pfam; PP02911; Neur chan LBD; 1.

Pfam; PF02922; Neur chan LBD; 1.

PRINTS; PR00525; NRICONCHANNEL.

TIGREAMS; TIGRO0860; LIC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Postsynaptic memorane, family. Transmembrane; Multigene family. 22 BY
                                                  (Rel. 33, Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                     acetylcholine receptor.";
Genomics 26:399-402(1995)
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164
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90
133
502 AA;
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                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23
231
262
296
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                                                                                                                                                        CHRNA7 OR ACRA7
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                                                01-FEB-1996
                                                                           01-FEB-1996
28-FEB-2003
  MOUSE
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ACH7 MO
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  SOLUTION TO THE SECOND SECOND
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472
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                                                                                                                                      LSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS 246
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                                                                                                                                                                                                                                                                     366
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                 69
70 OVLTÍNIWLOMSWIDHYLOWNMSEYPGVKNVRFPDGQIWKPDILLYNSADERFDATFHÍN
                                                                                                                                                                                                      307 SVVVTVIVLRYHHIDPDGGKMPKWIRIILINWCAWFLRMKRPGEDKVRPACQHKPRRCSL
                                                                                                                                                                                                                                                                                                                                                                                                               367 ASVELSAGAPPTSNGNLLYI -- GFRGLEGMHCAPTPDSGVVCGRL--ACSPTHDEHLMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67 QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN
                                                                                                                  127 VVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                                                                                                                                                                                                                                                   SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
                                                                                                                                                                                                                                                                                                                                                                                     367 ELKERSS----KSLLANVLDIDDDFR-----HGPPPPNSTASTGNLGPGCSIFRTDFRRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     418 FVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Neuronal acetylcholine receptor protein, alpha-7 chain precursor. (Gallus gallus (Chicken). Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Couturier S., Bertrand D., Matter J.M., Hernandez M.C., Bertrand S., Millar N., Valera S., Barkas T., Ballivet M.;

"A neuronal nicotinic acetylcholine receptor subunit (alpha 7) is developmentally regulated and forms a homo-oligomeric channel blocked
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and MAbs reveal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1-18 FROM N.A. STRAINSUBERTYTHROCYTE;
STRAINSHIPE 1 ESHOFIN; TISSUBERTYTHROCYTE;
MEDLINE-93042204; PubMed-145587;
Matter-Sadzinski L., Hernandez M.C., Roztocil T., Ballivet M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lindstroem J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schoepfer R., Conroy W.G., Whiting P., Gore M., Lindstroem J. "Brain alpha-bungarotoxin binding protein cDNAs and MAbs revesubtypes of this branch of the ligand-gated ion channel gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-AUG-1991 (Rel. 19, Created)
01-AUG-1991 (Rel. 19, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       502 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Brain;
MEDLINE=90315158; PubMed=2369519;
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473 MAFSVFTIICTIGILMSAPNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         by alpha-BTX.";
Neuron 5:847-856(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Neuron 5:35-48(1990).
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NCBI_TaxID=9031;
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27;

78; Mismatches 148; Indels

249; Conservative

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us-09-303-232-6.rsp

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                    "Neuronal specificity of the alpha 7 nicotinic acetylcholine receptor promoter develops during morphogenesis of the central nervous
                                                                                                                                                                      TISSUE=Brain;
MEDLINE=85270494; PubMed=3860855;
Conti-Tronconi B.M., Dunn S.M.J., Barnard B.A., Dolly J.O., Lai F.A.,
                                                                                                                                                                                                                                 Ray N., Raftery M.A.;
"Brain and muscle nicotinic acetylcholine receptors are different but homologous proteins.";
                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=92049732; PubMed=1719423; Recah F., Bertrand D., Galzi, J.-L., Devillers-Thiery A., Mulle C., Rasy N., Bertrand S., Ballivet M., Changeux J.-P.; "Mutations in the channel domain alter desensitization of a neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- DEVELOPMENTAL STAGE: Alpha-7 transcripts transiently accumulate in the developing optic tectum between E5 and E16.
-!- SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDILINE=93024917; PubMed=1383829; Galzi J.-L., Devillers-Thiery A., Hussy N., Bertrand S., Changeux J.-P., Bertrand D.; "Mutations in the channel domain of a neuronal nicotinic receptor convert ion selectivity from cationic to anionic."; Nature 359:500-505(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUTAGENESIS TO CONVERT ION SELECTIVITY FROM CATIONIC TO ANIONIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       membrane.
SUBUNIT: Forms a homo-oligomeric channel blocked by alpha-bungarotoxin. The structure is probably pentameric (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Channel; Glycoprotein; Signal;
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                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 82:5208-5212(1985)
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SIGNAL
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InterPro; IPROGGOS; Neur_chan_LBD.
InterPro; IPROGGOS; Neur_chan_LBD.
InterPro; IPROGSOI; Neur_chan_LBD.
Ffam; PFC2931; Neur_chan_memb; I.
Pfam; PFC2932; Neur_chan_memb; I.
Pfam; PFC0292; Neur_chan_memb; I.
TIGRFAMS; TIGROOGGO; LIC; I.
TIGRFAMS; TIGROOGGO; LIC; I.
PROSITE; PSGO236; NEUROTR ION CHANNEL; I.
POSTSYNAPTIC membrane; Ionic Channel; Glycop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALPHA-7 CHAIN.
EXTRACELLULAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; X52295; CAA36543.1; --
EMBL; X68246; CAA48317.1; --
EMBL; X68586; CAA48576.1; --
PIR; JNU113; JNU113.
PDB; 1KC4; 17-APR-02.
PDB; 1KL8; 17-APR-02.
                                                                                             EMBO J. 11:4529-4538(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nicotinic receptor.";
Nature 353:846-849(1991).
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280
317
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MUTAGENESIS OF LEU-270.
                                                                                                                                              SEQUENCE OF 24-47.
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RANGE STANDAR STANDAR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302 IIVGLSVVVTVIVLQYHHHDPDGGKMPKMTRVILLNMCAWFLRMKRPGEDKVRPACQHKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 APMLAALALLALLPVSEQGPHEKRILNALLANYNTLERPVANESEPLEVRFGLTLQQIID
                                                                                                                                                                                                                                                                                                                                                                                   5 ALMLWLLAAAGLVRESLQGEFQRKLYKELLKNYNPLERPVANDSQPLTVYFTLSLMQIMD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                         47.5%; Score 1253; DB 1; Length 502;
48.8%; Pred. No. 1.9e-101;
iive 81; Mismatches 145; Indels 36; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguela P., Wadiche J., Dineley-Miller K., Dani J.A., Patrick J.W., "Molecular cloning, functional properties, and distribution of rat
                                                                                                                                             N-LINKED (GLCNAC. . .) (POTENTIAL).
L->S,T: SUPPRESSES INHIBITION BY THE
OPEN-CHANNEL BLOCKER QX-222.
                                                ASSOCIATED WITH RECEPTOR ACTIVATION (BY SIMILARITY).
N-LINKED (GLCNAC. . . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
N-LINKED (GLCNAC. . ) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
01-FEB-2003 (Rel. 41, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-7 chain precursor.
CHRNAN OR ACRA7.
Rattus norvegicus (Rat).
                                                                                                                                                                                                  QR -> ET (IN REF. 3).
572325D4309AD2FD CRC64;
                                                                                                                                                                                              (IN REF
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                                        SIMILARITY
CYTOPLASMIC.
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                                                                                                                                                                                                                       MM.
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Matches 250; Conservative
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469
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502 AA;
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DOMAIN
TRANSMEM
                                                                                                                                       CARBOHYD
MUTAGEN
                                                                                                                                                                                                CONFLICT
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                                                                                                                                                                                                                                                               Query Match
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                                                         DISULFID
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306

366 366 477 472

186 186

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70 QVLTINIWLQMSWIDHYLQWNMSEYPGVKNVRFPDGQIWKPDILLYNSADERFDATFHIN 129
                                                                                                                                                                                                                                                                                  367 ELKERSS----KSLLANVLDIDDDFR-----HGPPPPNSTASTGNLGPGCSIFRTDFRRS 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBUNIT: Forms a homo-oligomeric channel blocked by alphabungarotoxin. The structure is probably pentameric (By similarity). Homo-oligomer of the short form gives rise to unfunctional channels, as does coexpression of both long and short
                                                    423 GAHPSDGDP------DLAKILEEVRYIANRNRCQDESEVICSEWKFAACVVDPLCL
                                VVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                              187 LSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS
                                                                                                                                                        247 MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVAS
                                                                                                                                                                                                                    307 SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
                                                                                                                                                                                                                                                                                                                 367 ASVELSAGAGPPTSNGNLLYI--GFRGLEGMHCAPTPDSGVVCGRL--ACSPTHDEHLMH
                                                                                                                                                                                                                                                                                                                                                418 FVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Alpha-Bungarotoxin-sensitive nicotinic receptors on bovine chromaffin cells: molecular cloning, functional expression and alternative splicing of the alpha 7 subunit.";

Eur. J. Neurosci. 7:647-655(1995).

-i. FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
15-MAR-2004 (Rel. 43, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-7 chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ISOId=P54131-2; Sequence=VSP 000075;
-!- TISSUE SPECIFICITY: At least in chromaffin cells.
-!- SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Adrenal medulla;
MEDLINE=59346009; PubMed=7620615;
Garcia-Guzman M., Sala F., Sala S., Campos-Caro A., Stuehmer W.,
Gutierrez L., Criado M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Eutel
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Integral membrane protein. ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Event=Alternative splicing; Named isoforms=2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. (ISOFORMS LONG AND SHORT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=P54131-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                473 MAFSVFTIICTIGILMSAPNFV 494
                                                                                                                                                                                                                                                                                                                                                                                                            478 FVFTLFTIIATVAVLLSAPHII 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               forms of the receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Name=Short
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=Long;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  membrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHRNA7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACH7
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                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>'</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 LALAAALLHVSLQGBFQRRLYXELVKNYNPLERPVANDSQPLTVYFSLSLLQIMDVDEKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAL-LALL PVSEQGPHEKRLLINALLANYNTLER PVANESEPLEVRFGLTLQQIIDVDEKN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                            -!- SUBCELLULÂR LOCATION: Integral membrane protein.
-!- SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27;
                                                                                                                                                                                                                                                               SUBUNIT: Forms a homo-oligomeric channel blocked by alphabungarotoxin. The structure is probably pentameric (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 502;
alpha 7: a nicotinic cation channel highly permeable to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          49.4%; Pred. No. 7e-101;
iive 78; Mismatches 149; Indels
                                                                                                                                                                    Hartley M.; Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                           Submitted (APR-1994) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              00996E74EC7B9A56 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BY SIMILARITY).
N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC.
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P -> R (IN REF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; L31619; AAC33136.1; --
PIR; T01378; T01378.
InterPro; IPR006029; Neu_channel_memb.
InterPro; IPR006202; Neur_channel_
Fam; PF0231; Neur_channel_
Pfam; PF0231; Neur_chan_EBD.
Pfam; PF0231; Neur_chan_memb; 1.
PRINTS; PR00252; Neur_chan_memb; 1.
TIGRPAMS; TIGR00860; LIC; 1.
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                                                                                                                                                     STRAIN=Sprague-Dawley; TISSUE=Brain;
                                                                          TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Postsynaptic membrane, family.
Transmembrane, Multigene family.
22 BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           56410 MW;
                              J. Neurosci. 13:596-604(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; S53987; AAB25224.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47.28;
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                                                                          STRAIN-Sprague-Dawley;
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502 AA;
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                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                 similarity).
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                                                                                                                                      REVISION TO 363
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                                                                                            Boulter J.;
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422 QPSEGDP-----DLAKILEEVRYIAHRFRCQDESEAVCSEWKFAACVVDRLCLMA 471
                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                      Ballivet M., Alliod C., Bertrand S., Bertrand D.; "Nicotinic acetylcholine receptors in the nematode Caenorhabditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -:- FUNCTION: Possible acetylcholine receptor.
-:- SUBCELLULAR LOCATION: Integral membrane protein.
-:- SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ASSOCIATED WITH RECEPTOR ACTIVATION (BY SIMILARITY).
N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN
                                                                                                                                                                                  01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
28-FEB-2003 (Rel. 41, Last amnotation update)
Acetylcholine receptor like protein, alpha-type chain precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TICRFAMS; TICR00860; LIC; 1.
PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACETYLCHOLINE RECEPTOR LIKE ALPHA-TYPE CHAIN. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-BEISTOL N.A.
Nelson J., Wohldmann P.;
Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL)
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InterPro; IPR006029; Neu channel memb
InterPro; IPR006020; Neur chan LBD.
InterPro; IPR006201; Neur chan LBD.
InterPro; IPR006201; Neur chan LBD.
Ffam; PP02931; Neur chan LBD; 1.
Pfam; PP02932; Neur chan Lemb; 1.
PRINTS; PR00252; NRIONCHANNEL.
                                                                                                                                                      PRT;
                                                                491
                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96196478; PubMed=8627624; Ballivet M., Alliod C., Bertrand
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mol. Biol. 258:261-269(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL, AF022973; AAC25796.1; -. PIR; S68588; S68588.
HSSP; P58154; 119B.
                                 480 FTLFTILATVAVLLSAPHII
                                                                472 FSVFTILCTIGILMSAPNFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; X83887; CAA58764.1; -.
                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                     Caenorhabditis elegans.
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Transmembrane; Signal
                                                                                                                                                                                                                                                                                                                                                                       STRAIN-Bristol N2;
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
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P48180;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67 QVLTTNIWLQMTWTDHYLQWNASEYPGVKTVRFPDGQIWKPDILLYNSADERFDATFHTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187 LSDPITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247 MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transmembrane; Multigene family; Alternative splicing.

SIGNAL 1 19 BY SIMILARITY.

CHAIN 20 499 NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1240.5; DB 1; Length 499;
                                                                                                                                               EMBL; X93604; CAA63802.1; -.
InterPro; IPR006029; Neu channel memb.
InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006201; Neur channel.
Pfam; PF02931; Neur chan LBD; 1.
Pfam; PF02932; Neur chan memb; 1.
PRINTS; PR00525; NEIONGHANNEL.
TIGREAMS; TIGR00860; LIC; 1.
PROSITE; PS00236; NEUROTE ION CHANNEL, 1.
PSCSTIR; PS00236; NEUROTE ION CHANNEL, 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 2.3e-100;
; Mismatches 152;
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                                                                                                                                                                                                                                                                                                                                                                         ALPHA-7 CHAIN.
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BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47.08;
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Matches 247; Conserv
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TRANSMEM
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(ISOFORM 2)

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                                                                                                                                                                                                                                                                                                                                      463
                                                                                                                              62 VDEKNQVVYVNAMLDYTWNDYNLVWDKAEYGNITDVRFPAGKIWKPDVLLYNSVDINFDS 121
                                                                                                                                                       TYQINVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKD 181
                                                                                                                                                                   CVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCI 300
                                                                                                                                                                                                                                                                                 301 MFMVASSVVLTVVVINYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTI--M 358
                                                                                                                                                                                                                                                                                                                          359 MNTRMRELELKERSSKSLLANVLD-----IDDDFRHGPPPPNSTASTGNLGPGCS 408
                                                                                                                                                                                                                                                                                                                                                                                I------PSTMISSNGTTTDVSQQATLLILHRIYHELKIVTKRMIEGDKEEQACN 461
                                                                                                               VDEKNQLLITVIWLSLEWNDYNLRWNDSBYGGVKDLRITPNKLWKPDVLMYNSADEGFDG 121
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                                                                                                                                                                                                                                                                                                                                                                   409 IFRIDFRRSFVRPSTMEDVGGGLGSHHRE-----LHLILRELQFITARMKKADEEAELIS
                                                                        2 APMLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIID
                                                                                         -----QERRLYEDLMRNYNNLERPVANHSEPVTVHLKVALQQIID
                                                                                                                                                                                                 182 EAGG-DLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVP
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mihovilovic M., Roses A.D.; "Expression of mRNAs in human thymus coding for the alpha 3 subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACH3 HUMAN STANDARD; PRT; 503 AA.

922297; 051823; 056RH3; 099553; 098093;
01-0CT-1993 (Rel. 27, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 42, Last sequence update)
Neuronal acetylcholine receptor protein, alpha-3 chain precursor.
CHRNA3 OR NACHRA3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
 --LINKED (GLCNAC. . .) (POTENTIAL)
E463ABB40AC9FA82 CRC64;
                                                    51;
                               DB 1; Length 498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fornasari D., Chini B., Tarroni P., Clementi F.;
"Molecular cloning of human neuronal nicotinic receptor alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota, Metazca, Chordata, Craniata, Vertebrata, Butele
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                            DWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHII 499
                                                                                                                                                                                                                                                                                                                                                                                                                      80; Mismatches 140;
                                         Pred. No. 4.3e-100;
                              46.9%; Score 1237.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of a neuronal acetylcholine receptor.";
 N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=90245296; PubMed=2336208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Neurosci. Lett. 111:351-356(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=91114756; PubMed=1989896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM 1).
93 N-
57169 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Exp. Neurol. 111:175-180(1991)
                                        47.58;
                                                   245; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Human)
         498 AA;
                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                         15 APTLGSL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Thymus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
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 CARBOHYD
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MEDLINE=22388257; PubMed=12477932;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Richards R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
A chards R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
B stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
B schaler S.A., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
B soak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Muxny D.M., Sodergen B.J., Lu X., Gibbs R.A.,
Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Mhiting M., Madan A., Young A.C., Shevchenko Y., Boulfard G.G.,
Blatesley R.W., Touchman J.W., Grener B.D., Dickson M.C.,
Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
Human and mouse cDNA sequences ";
Thuman and mouse cDNA sequences ";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rempel N., Heyers S., Engels H., Sleegers E., Steinlein O.K.; "The structures of the human neuronal nicotinic acetylcholine receptor beta2- and alpha3-subunit genes (CHRNB2 and CHRNB3) "; Hum. Genet. 103:645-653(1998).
                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: Neuronal AChR seems to be composed of two different type of subunits: alpha and non-alpha (betA).
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"Cloning cholinergic receptors in human keratinocytes.";
submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lev-Lehman E., Bercovich D., Xu W., Stockton D.W., Beaudet A.L., "Characterization of the human beta4 nAChR gene and polymorphisms CHRNA3 and CHRNA4.";
MEDLINE=97062879; PubMed=8906617; Berckhan K.J., Urrutia A., Ellis S.B., Berckhan K.J., Urrutia A., Ellis S.B., Berckhan K.J., Urrutia A., Ellis S.B., Johnson E.C., Velicelebi G., Harpold M.M.; "Comparative structure of human neuronal alpha 2-alpha 7 and beta 2-beta 4 nicotinic acetylcholine receptor subunits and functional expression of the alpha 2, alpha 3, alpha 4, alpha 7, beta 2, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anand R., Lindstrom J.;
Submitted (JUN-1990) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND VARIANT LEU-21 INS. MEDLINE=21342809; PubMed=11450844;
                                                                                                                                                                                                                                      beta 4 subunits.";
J. Mol. Neurosci. 7:217-228(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM 2).
MEDLINE=99118870; Pubmed=9921897;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Hum. Genet. 46:362-366(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FROM N.A. (ISOFORM 2).
                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM 1)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 6-493 FROM N.A.
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P04757;
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                                                                                                                       Query Match
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RG; GO:0015464; F:acetylcholine receptor activity; TAS.

RG; GO:0015464; F:acetylcholine receptor activity; TAS.

RG; GO:0005215; F:transporter activity; TAS.

RG; GO:0007165; P:signal transduction; TAS.

RG; RG; RG; RG; RG; RG; RG; RG;

InterPro; IPR006202; Neur channel memb.

RITERPRO; IPR006202; Neur channel.

RF Pfam; PF02931; Neur chan memb; 1.

RF RINTS; PR00252; NRICORHANNEL.

RRINTS; PR00252; NRICORHANNEL.

RRCSTTE; PS00236; NEUROTE ION CHANNEL; 1.

RCCEPTOR; PS00236; NEUROTE ION CHANNEL; 1.

RCCEPTOR; PS00236; Neur membrane; Ionic channel; Glycoprotein; Signal; ATANNER PS00236; Neur membrane; Multigene family; Alternative splicing; Polymorphism.
                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN
                                                                                                                                                          Note=No experimental confirmation available; SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
(BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED (GLCNAC...) (POTENTIAL)
N-LINKED (GLCNAC...) (POTENTIAL)
MALAV -> MGSGPL (in isoform 2).
/FIId=VSP_000073.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LALSP_-> ALAAPGAVA (IN REF. 2)
-> CRA (IN REF. 1),
G (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXTRACELLULAR (POTENTIAL)
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-!- ALTERNATIVE PRODUCTS:
Event-Alternative splicing; Named isoforms=2;
Name=1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         L -> LL.
/FTId=VAR 013240.
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                                                                                                                                       IsoId=P32297-2; Sequence=VSP_000073;
                                                                                                IsoId=P32297-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
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EMBL; AU007783; CAA07682.1; --
EMBL; AJ007784; CAA07682.1; --
EMBL; AJ007784; CAA07682.1; --
EMBL; AJ007785; CAA07682.1; JOINED.
EMBL; AJ007786; CAA07682.1; JOINED.
EMBL; AJ007786; CAA07682.1; JOINED.
EMBL; BC002996; AAH01642.1; --
EMBL; BC000596; AAH01642.1; --
EMBL; BC000596; AAH01642.1; --
EMBL; AF385594; AAK68110.1; --
EMBL; AF38559; CAA37625.1; --
EMBL; A37040; A37040.
PIR; A37040; A37040.
PIR; A53956; A53956.
Genew; HGNC1957; CHRNA3.
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                                                                                                                                                                                                                                                                                                                                                                                            M37981, AAA59942.1; -. U62432, AAB40110.1; -. Y08418; CAA69695.1; -.
                                                                                                                                                                                                                                                                                                                                                                           EMBL; M86383; AAC84176.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                121 GTYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLK 180
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MEDLINE=88041184; PubMed=2444984;
Boulter J., Connolly J.G., Deneris E.S., Goldman D.J., Heinemann S.F.,
Patrick J.;
                                                                                                                                                                                                                                                                                                                                                                            1 MAPMLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      191 G-SSMNLKDYWESGEWAIIKAPGYKHDIKYNCCEEIYPDITYSLYIRRLPLFYTINLIIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11 LSPPRLLLLLLSLLPVARASEAEHRLFERLFEDYNEIIRPVANVSDPVIIHFEVSMSQLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 DEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 MFMVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 TRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNL------GPGCS----
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                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae, Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patrick J.;
Isolation of a cDNA clone coding for a possible neural nicotinic
acetylcholine receptor alpha-subunit.";
Nature 319:368-374(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-1987 (Rel. 05, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-3 chain precursor.
CHRNA3 OR ACRA3.
                                                                                                                                                                                    61;
                                                                                                                             Length 503;
                                                                                                                                                                                 92; Mismatches 166; Indels
                                                                            57309 MW; 8A9EBC5D71AEC7D6 CRC64;
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Boulter J., Evans K., Goldman D.J., Martin G., Treco
Heinemann S.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     455 ADEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLL 493
DD -> TT (IN REF. 1).
I -> S (IN REF. 1).
L -> V (IN REF. 1).
                                                                                                                                   DB 1;
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                                                                                                                                37.5%; Score 989.5; DB 1
38.5%; Pred. No. 1.9e-78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499 AA
                                                                                                                                                                                    Matches 200; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
  133
235
430
132 1
235 2
430 4
503 AA;
                                                                                                                                                            Similarity
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SSMNLKDYWESGEWALIKAPGYKHEIKYNCCEEIYQDITYSLYIRRLPLFYINLIIPCL 247
                                                                                                             DKTKALLKYTGEVTWIPPAIFKSSCKIDVTYFPFDYQNCTMKFGSWSYDKAKIDLVLIG- 187
                                                                                             243 LISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMF
                                 AGGDLSDFITNGEWYLIGMPGKKNT1TYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCV
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RIFLWVFILVCILGTAGLFL 490
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovinae; Bos.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACH3 BOVIN
Q07263;
                                                                                                                                                                                      308
    129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEKNOLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGT 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89
                                                                                                                                                                                                                                             SUBUNIT: NEURONAL ACHR SEEMS TO BE COMPOSED OF TWO DIFFERENT TYPES OF SUBUNITS: ALPHA AND NON-ALPHA (BETA). ALPHA-3 SUBUNIT CAN BE COMBINED TO BETA-2 OR BETA-4 TO GIVE RISE TO FUNCTIONAL RECEPTORS. SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PMLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQ11DV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
                                                                                                                                  "Characterization of an acetylcholine receptor alpha 3 gene promoter and its activation by the POU domain factor SCIP/Tst-1.";
J. Biol. Chem. 269:10252-10264(1994).
-!- FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
ALPHA-3 CHAIN.
EXTRACELLULAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
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N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. .) (PROBABLE).
"Functional expression of two neuronal nicotinic acetylcholine receptors from cDNA clones identifies a gene family."; Proc. Natl. Acad. Sci. U.S.A. 84:7763-7767(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95; Mismatches 177; Indels
                                                                                                        Yang X., McDonough J., Fyodorov D., Morris M., Wang F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. ) (P)
D66C491E832B9C34 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37.0%; Score 977.5; DB 1
40.2%; Pred. No. 2.1e-77;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR006029; Neur channel memb. InterPro; IPR006202; Neur chan LBD. InterPro; IPR006201; Neur chan LBD. Ffam; PF02931; Neur chan LBD; 1. Pffam; PF02931; Neur chan memb; 1. PRINTS; PR0252; Neur chan memb; 1. ITGRPAMS; TIGR00860; LIC; 1.
                                                                                          MEDLINE=94193711; PubMed=8144606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane; Multigene family
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EMBL; L31621; AAA41673.1; -.
EMBL; U04961; AAA18001.1; -.
                                                          SEQUENCE OF 1-21 FROM N.A.
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                      368 GAELSNINCFSRADSKSC-----KEGYPCQDGTCGY-----CHHRRVKISNFS 410
                                                                                                                                                                                                        303 MVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRP--GKKITRKT-IMM 359
                                                                                                                                                                        416 RSFVRPSTMEDVGG--GLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVD 473
                                                                                      360 NTRMRELELKERS-SKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFR---TDFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- SUBUNIT: Neuronal AChR seems to be composed of two different type of subunits: alpha and non-alpha (betA).
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-!- SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acetylcholine receptor from bovine adrenal chromaffin cells.";
Neurochem. Res. 17:281-287(1992).
-!- FUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=92319195; PubMed=1620271;
Criado M., Alamo L., Navarro A.;
"Primary structure of an agonist binding subunit of the nicotinic
                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-1994 (Rel. 30, Created)
1-OCT-1994 (Rel. 30, Last sequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-3 chain precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR006293; Neu channel memb.
InterPro; IPR006202; Neur_chan_LBD.
InterPro; IPR006202; Neur_channel.
Pfam; PF02931; Neur_chan_LBD; 1.
Pfam; PF02932; Neur_chan_LBD; 1.
PRINTS; PR00252; NRIONCHĀNNEL.
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Drosophilidae; Drosophila.

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NCBI_TaxID=7227
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                                                                         SECUENCE
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126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110 TRSSSSESVDAVLSLSALSPEIKEAIQSVKYIAENMKAQNEAKEIQDDWKYVAMVIDRIF 469
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        246 SFLTVLVFYLPSDCGEKVTLCISVLESLIVFLLVITETIPSTSLVIPLIGEYLLFTMIFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LRRLLLLLLLPVASTSDAEHRLFERLFEDYNEIIRPVANVSDPVIIOFEVSMSOLVKVDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245 SSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAFTLPQVSDAIPLLGTYFNCIMFMV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362 RMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFR---TDFRRSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               366 ELSNINCFSRIESKVC-----KEGYP-----CQDGLCG-YCHHRRAKISNFSANL
                       PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
                                                                                              PÓTENTIAL.
NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                POTENTIAL.
BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARIIY).
N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
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P09478; Q9VC74;

P09478; Q9VC74;

P01-MAR-1989 (Fel. 10, Created)

10-OCT-2003 (Rel. 42, Last sequence update)

10-OCT-2003 (Rel. 42, Last annotation update)

10-OCT-2003 (Rel. 42, Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; Length 495;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 970.5; DB 1; Length 4
Pred. No. 8.3e-77;
3; Mismatches 181; Indels
                                                                                                                                                                                                                                                                           CYTOPLASMIC (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     322825629821EA07 CRC64;
                                                                                                                                                ALPHA-3 CHAIN.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                              (BY SIMILARITY)
                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                   POTENTIAL
                                                                         ransmembrane; Multigene family.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        56914 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36.8%;
39.8%;
FIGRFAMS; TIGRO0860; LIC; 1
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263
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SEQUENCE
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DT 01-MAR
DT 10-OCT
DE ACCCTVI
GN NACR-A
GN NACR-A
CO NEODEC
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536 SLYDO 540
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              membrane.
              NS
                                                                                                                                                                    ACH3 CHICK
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              395
                                                      437
                                                                                                                                                                              P09481;
                                                                                                                                                                                                                                                                Gallus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             263 YLPSDSGEKISLCISILLSLTVFFLLABIIPPTSLTVPLLGKYLLFTWMLVTLSVVVTI 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDL-VLKD------EAGGDLSDFIT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVASSVVLTV 312
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                                                                                                                                                                                                           PRUSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein; Signal; Transmembrane; Multigene family; Polymorphism.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21 PHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEKNQLLITNIWLSLEWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        193 NGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRTLYYFFNLIVPCVLISSMALLGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                             ACETYLCHOLINE RECEPTOR PROTEIN, ALPHA-
 SIMILARITY: Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                      ASSOCIATED WITH RECEPTOR ACTIVATION (BY SIMILARITY).

N-LINKED (GLCNAC. .) (POTENTIAL).

N-LINKED (GLCNAC. ..) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                            91;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 964.5; DB 1; Length 567;
Pred. No. 3.3e-76;
95; Mismatches 160; Indels 91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             160; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                    08E1F721FB2A92AC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323 AVLNVNFRSPVTHRMAPWVQRLFIQILPKLLCIERPKKE----
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L -> H (IN REF.
                                                                                                                                                                                                                                                                     LIKE CHAIN 1.
EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                             BY SIMILARITY
                                                                                                                                                                                                                                                                                                                         CYTOPLASMIC.
                                                                                                                                Flybase; FBgn000036; nAcR-alpha-96Aa.
InterPro; IRR06029; Neu channel memb.
InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006201; Neur chan LBD.
Pfam; PF02931; Neur chan memb; 1.
Prints; PR02922; Neur chan memb; 1.
PRINTS; PR00252; NRTONCHĀNNEL.
TICRFAMS; TICR00866; LIC; 1.
PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                   64019 MW;
                                                                                                  EMBL; X07194; CAA30172.1; -. EMBL; AE003747; AAF56301.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                        36.5%;
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233
538
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264
2290
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513
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223
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233
538
108
567 AA;
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TRANSMEM
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DISULFID
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(See http://www.isb-sib.ch/announce/
---TASTGNLGPGC----SIFRTDFRRSFVRPSTMEDVGGGLGSHHR 436
                                                                                                                                                                                                                                    476 EMEKTIEGSRFIAQHVKOKKDKFESVEEDWKYVAMVLDRMFLWIFAIACVVGTALIILQAP 535
                                                                                                                                                           ELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAP 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-1989 (Rel. 10, Created)
01-APR-1993 (Rel. 25, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-3 chain precursor.
Gallus gallus (Chicken).
Eukaryota, Metazoa, Chordata; Craniata, Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: Neuronal AChR seems to be composed of two different type of subunits: alpha and non-alpha (also called beta). A functional receptor seems to consist of two alpha-chains and three non-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nef P., Oneyser C., Alliod C., Couturier S., Ballivet M.;
"Genes expressed in the brain define three distinct neuronal
nicotinic acetylcholine receptors.";
EMBO J. 7:595-601 [1988].
-!- FUNCTION: After binding acetylcholine, the AChR responds by an
extensive change in conformation that affects all subunits and
leads to opening of an ion-conducting channel across the plasma
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DEVELOPMENTAL STAGE: High levels in the developing ciliary and superior cervical ganglia.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=91009210; PubMed=1698777;
Couturier S., Erkman L., Valera S., Rungger D., Bertrand S.,
Boulter J., Ballivet M., Bertrand D.;
"Alpha 5, alpha 3, and non-alpha 3. Three clustered avian genes encoding neuronal nicotinic acetylcholine receptor-related
                                               496 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed.
entities requires a license agreement (See P
or send an email to license@isb-sib.ch).
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InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006201; Neur channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biol. Chem. 265:17560-17567(1990)
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MEDLINE=88283624; PubMed=3267226;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; X07346; CAA30284.1; JOINED.
EMBL; X07347; CAA30284.1; JOINED.
PIR; S00378; ACCH3N.
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                                                                                                                                                                                                                                                                                                     183 AGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCV
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                                                                 NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
88-FBB-2003 (Rel. 41, Last annotation update)
Acerylcholine receptor protein, alpha-like chain precursor (MARA1).
ARA1.
                                                                                                                                                     N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (PROBABLE).
FD25BC02A9B601FF CRC64;
                                                                                                                                       ASSOCIATED WITH RECEPTOR ACTIVATION (BY SIMILARITY).
                                                                                                                                                                                                          65;
                                                                                                                                                                                         DB 1; Length 496;
      Pfam; PF02932; Neur_chan_memb; 1.
PRINTS; PR00222; NRTONCHANNEL.
TIGRFAMs; TIGROOG, LIC; PROSITE; PS002346; NRUNCTR ION CHANNEL; 1.
PROSITE; PS002346; NRUNCTR ION CHANNEL; 1.
POSTSYDADTIC membrane; Ionic Channel; Glycoprotein; Signal;
                                                                                                                                                                                                          Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35.9%; Score 948.5; DB 1; 37.7%; Pred. No. 6.9e-75; tive 89; Mismatches 168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     516 AA
                                                                         ALPHA-3 CHAIN.
EXTRACELLULAR.
                                                                                                                                  SIMILARITY
                                                                                                                 CYTOPLASMIC.
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                                                 Transmembrane, Multigene family.
                                                                                                                                                                         57027 MW;
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163 1
496 AA;
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264
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P91766;
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SEQUENCE
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@ib.ch).
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                Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Sphingiodea;
Sphingidae; Sphinginae; Manduca.
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InterPro; IPR006202; Neur channel bb.
InterPro; IPR006201; Neur channel.
Ffam; PP002911; Neur channel.
Pfam; PP02911; Neur channel.
Pfam; PP02912; Neur channel; 1.
PRINTS; PR00252; NRIONCHĀNNEL.
TIGREAMS; TIRR00866; LIC; 1.
PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Innic channel; Glycoprotein; Signal; Transmembrane; Multigene family.
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                                                                                                                                                                                                                                                                                                              Eur. J. Neurosci. 10:879-889(1998).
-!- PUNCTION: After binding acetylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma membrane (By similarity).
-!- SUBCELULAR LOCATION: Integral membrane protein.
-!- SIMILARITY: Belongs to the ligand-gated ionic channel family.
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                                                                                                                                                    SEQUENCE FROM N.A.
MEDILINE=98424077; PubMed=9753155;
Bastham H.M., Lind R.J., Eastlake J.L., Clarke B.S., Towner P.,
Reynolds S.E., Wolstenholme A.J., Wonnacott S.;
"Characterization of a nicotinic acetylcholine receptor from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ASSOCIATED WITH RECEPTOR ACTIVATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BY SIMILARITY). (POTENTIAL)
N-LINKED (GLCNAC...) (POTENTIAL)
N-LINKED (GLCNAC...) (POTENTIAL)
N-LINKED (GLCNAC...) (POTENTIAL)
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sexta (Tobacco hawkmoth) (Tobacco hornworm)
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ches 171;
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LIKE CHAIN.
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BY SIMILARITY
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                                                                                                   NCBI TaxID=7130;
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                                                      TLPPDSGEKLTLGVTILLSLTVFLNLVARTLPQVSDAIPLLGTYFNCIMFMVASSVVLTV 312
                                                                                       VVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKI---TRKTIMMNTRMRELELK 369
                                                                                                                                         ERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGP--GCSIFRTDFRRSFVRPSTMEDV 427
                                                                                                                                                                                                           417 CDALREWHRCPELHKAIDGINYIADQTRKEEESTRVKEDWKYVAMVLDRPFLMIFTLAVV 476
SUBWDILEVPAVRNEKEYTCCDEPYLDITFNITMRRKTLFYTVNLIPCMGISFLTVLVF
                                                                                                                                                                  ----PAPPRPPCAPPLAPCAACA------PAEAPAL
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Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
Transmembrane; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=91092263; PubMed=1702381;
MARShall J., Buckingham S.D., Shingai R., Lunt G.G., Goosey M.W.,
Marshall G., Sattelle D.B., Barnard E.A.;
"Sequence and functional expression of a single alpha subunit of an insect nicotinic acetylcholine receptor.";
FMBO J. 9:431-4398(1990).
-!- FUNCTION: After binding acetylcholine, the ACHR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: Integral membrane protein. Belongs to the ligand-gated ionic channel family.
                                                                                                                                                                                                                                                                                                                                                         01-NOV-1991 (Rel. 20, Created)
01-NOV-1991 (Rel. 20, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Acetylcholine receptor protein, alpha-L1 chain precursor.
Schistocerca gregaria (Desert locust).
Eukaryota, Metazoa, Arthropoda, Hexapoda; Insecta, Pterygota, Neoptera, Orthoptera, Orthoptera, Orthoptera, Caelifera, Acridomorpha,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Acridoidea; Acrididae; Cyrtacanthacridinae; Schistocerca.
NCBI_TaxID=7010;
                                                                                                                                                                                                                                                                                                                                    557 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; $12359; $12359.
InterPro; IPR006029; Neu_channel memb.
InterPro; IPR0060202; Neu_chan_LBD.
InterPro; IPR006502; Neur_chan_LBD.
InterPro; IPR006502; Neur_chan_lBD.
Pfam; PF02931; Neur_chan_LBD; 1.
Pfam; PF02932; Neur_chan_memb; 1.
PRINTS; PR00252; NEUR_CHANNEL.
TIGREFAMS; TIGR00860; LIC; 1.
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ACETYLCHOLINE RECEPTOR PROTEIN, ALPHA-L1
                                                                                                                                                                                                BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
                                                                                                                                                                                                                                                                   (GLCNAC. . .) (POTENTIAL). (GLCNAC. . .) (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 557
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          351 -KITRKTIMMNTRMRELELKERSSKSLLA--NVLDIDDDFRH-
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P17644; QWC73;
01-AGG-1990 (Rel. 15, Created)
01-AGC-2090 (Rel. 15, Last sequence update)
10-CCT-2003 (Rel. 42, Last annotation update)
NACCY-LOOLINE receptor protein, alpha-like chain 2 FANACR-ALPHA-96AB OR ACRE OR SAD OR ACR96AB OR CG66844.
Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                35.8%; Score 944; DB 1; L. 36.9%; Pred. No. 2e-74; ive 96; Mismatches 181;
                                                                                                                                                                                                                                                (BY SIMILARITY)
                                             EXTRACELLULAR
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                                                                                                                                                  CYTOPLASMIC.
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                                                                                                                                                                                                                                                                                                                                                  MEDLINE=90360975; PubMed=1697262; Sawruk E., Schloss P., Berz H., Schmitt B.; Schloss P., Berz H., Schmitt B.; "Heterogeneity of Drosophila nicotinic acetylcholine receptors: SAD, a novel developmentally regulated alpha-subunit."; EMBO J. 9:2671-2677(1990)
                                                                                                          Baumann A., Jonas P., Gundelfinger E.D.; "Sequence of D alpha 2, a novel alpha-11ke subunit of Drosophila nicotinic acetylcholine receptors."; Nucleic Acids Res. 18:3640-3640(1990).
                                                                                                                                                                                                        TISSUE=Head;
MEDLINE=90353591; PubMed=2117557;
Jonas P., Baumann A., Merz B., Gundelfinger E.D.;
Jonas P., Baumann A., Merz B., Gundelfinger E.D.;
"Structure and developmental expression of the D alpha 2 gene encoding a novel nicotinic acetylcholine receptor protein of Drosophila melanogaser.";
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=Berkeley;
MEDLINE=20196006; PubMed=10731132;
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MEDLINE=22426066; PubMed=12537569;
                                                                                           MEDLINE=90301489; PubMed=2114015;
                                                                                                                                                                                                                                                                                                       Lett. 269:264-268(1990).
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Stapleton M., Carlson J.W., Brokstein P., Yu C., Champe M., George R.A., Guarin H., Kronmiller B., Pacleb J.M., Park S., Wan K.H., Rubin G.M., Celniker S.E.; Rubin G.M., Celniker S.E.; George B.S., SIRSEBARCHO80.1-PRESBARCHO80.8 (2002).

"A Drosophila full-length cDNA resource."; Genome Biol. 3:RESEARCHO80.1-PRESBARCHO80.8 (2002).

-! FUNCTION: After binding acetylcoline, the AChR responds by an extensive change in conformation that affects all subunits and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TMTKAILHYTGKVVWTPPAIFKSSCEIDVRYFPFDQQTCFMKFGSWTYDGDQIDLKHISQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Receptor; Postsynaptic membrane; Ionic channel; Glycoprotein; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                               leads to opening of an ion-conducting channel across the plasma
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                                                                                                                                                                                                                                                       TISSUE SPECIFICITY: CNS in embryos.
DEVELOPMENTAL STAGE: Late embryonic and late pupal stages.
SIMILARITY: Belongs to the ligand-gated ionic channel family.
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N-LINKED (GLCNAC. .) (POTENTIAL).
N-LINKED (GLCNAC. .) (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tch 35.7%; Score 943; DB 1; Length 576 al Similarity 36.9%; Pred. No. 2.6e-74; 197; Conservative 102; Mismatches 189; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LIKE CHAIN 2.
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97D6A46CADC3F42F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTOPLASMIC (POTENTIAL)
POTENTIAL.
                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR006029; Neu channel memb.
InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006201; Neur channel.
Pfam; PF02931; Neur chan LBD; I.
Pfam; PF02932; Neur chan memb; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; S11679; ACFFA2.
FlyBase; FBgn0000039; nAcR-alpha-96Ab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROBABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fransmembrane; Multigene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; X53583; CAA37652.1; -.
EMBL; AE003748; AAF56303.1; -.
EMBL; AX058446; AAL13675.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00252; NRTONCHANNEL.
TIGREAMS; TIGRO0860; LIC; 1.
PROSITE; PS00236; NEUROTR_ION_C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65506 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X52274; CAA36517.1; -.
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526
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327
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Best Local
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                                                                                           354 RKTIMMNTRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNS-TASTGNLGP-GCS-IF 410
                                                                                                                                                  FFNLIVPCVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLL 293
                                                                          GTYFNCIMFMVASSVVLIVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKIT 353
                                                                                                                                                                                      ------HHRELHLILRE 444
                                                                                                                                                                                                          439 VITATNRF--SGLVGALGGGLSTLSGYNGLPSVLSGLDDSLSDVAARKKYPFELEKAIHN 496
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A Kausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
A Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moorer T., Max S.I., Wang J., Hsich F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.I., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
205 KNDKDNKVEIGIDLREYYPSVEWDILGVPAERHEKYYPCCAEPYPDIFFNITLRRKTLFY 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUB-Substantia nigra,
MEDLINE=97062879; PubMed=8906617;
Elliott K.J., Ellis S.B., Berckhan K.J., Urrutia A.,
Chavez-Noriega L.E., Johnson E.C., Velicelebi G., Harpold M.M.;
"Comparative structure of human neuronal alpha 2-alpha 7 and beta
2-beta 4 nicotinic acetylcholine receptor subunits and functional
expression of the alpha 2, alpha 3, alpha 4, alpha 7, beta 2, and
                                                                                                                                                                                                                                                                                                                                                                                                                                     Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
MCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                     01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
10-OCT-2003 (Rel. 42, Last annotation update)
Neuronal acetylcholine receptor protein, alpha-6 chain precursor.
                                                                                                                                                                                                                                                     LQFITARMKKADEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

Ebihara M., Ohba H., Yoshikawa T.;

Ebihara M., Ohba H., Toshikawa T.;

"Alu and other elements in the promoter of human nAChR A6 (CHNRA6) direct transcriptional repression.";

Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Groot Kormelink P.J.;
Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                 RIDFRRSFVRPSTMEDVGGGLGS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 subunits.";
                                                                                                                                                                                                                                                                                                                               STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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MG; GO:000582; C:nicotinic acetylcholine-gated receptor-chan. ..; TAS.

GO; GO:0005464; F:acetylcholine receptor activity; TAS.

MG; GO:00015464; F:acetylcholine receptor activity; TAS.

MG; GO:0007165; P:signal transduction; TAS.

MG; GO:0007165; P:synaptic transmission; TAS.

MG; GO:0007269; P:synaptic transmission; TAS.

MG; GO:0006810; P:transport; TAS.

MINETPRO; IPR006029; New_channel_memb.

MINETPRO; IPR006202; New_channel.

MR: PP02931; Newr_chan_LBD;

MR: PP02931; Newr_chan_LBD;

MR: PP02932; Newr_chan_memb; 1.

MR: PRINTS; PR00252; Newr_Chan_memb; 1.

MR: PRINTS; PR00252; NEUCHANNEL.

MR: PRINTS; PR00365; NEUCHANNEL; 1.

MR: PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1.

MR: PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1.
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Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.M., Touchman J.W., Green E.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.M., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J.W., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.", Proc. Natl. Acad. Sci. U.S.A. 99:16999-16903 (2002).

F. FUNCTION: After binding acceylcholine, the AChR responds by an extensive change in conformation that affects all subunits and leads to opening of an ion-conducting channel across the plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEURONAL ACETYLCHOLINE RECEPTOR PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: Integral membrane protein.
SIMILARITY: Belongs to the ligand-gated ionic channel family.
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POTENTIAL.
CYTOPLASMIC.
POTENTIAL.
BY SIMILARITY.
ASSOCIATED WITH RECEPTOR ACTIVATION
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N-LINKED (GLCNAC. .) (POTENTIAL)
N-LINKED (GLCNAC. .) (POTENTIAL)
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40.2%; Pred. No. 1.6e-73;
live 83; Mismatches 159; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1A437E6DEE02ABFE CRC64;
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EXTRACELLULAR.
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EMBL, AB079247; BAC06855.1; JOINED.
EMBL, AB079247; BAC06855.1; JOINED.
EMBL, AB079249; BAC06855.1; JOINED.
EMBL, AB079249; BAC06855.1; JOINED.
EMBL, AB079250; BAC06855.1; JOINED.
EMBL, BC012456; AAH14456.1; -
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56898 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U62435; AAB40113.1; -.
Y16282; CAA76155.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGNC:15963; CHRNA6.
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Matches 195; Conservative
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494 AA;
                                                                                                                                                                                                                                                                                                                   membrane.
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TRANSMEM
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381 LDIDDDFRHGPP-----PPNSTASTGNLGPGCSIFRTDFRRSFVRPS--TMEDVG 428
                                                                                                                                                                                                                201 MPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLJVPCVLISSMALLGFTLPPDSGE 260
                                                                                211 ASGYKHDIKYNCCEEIYTDITYSFYIRRLPMFYTINLIIPCLFISFLTVLVFYLPSDCGE 270
                                                                                                        386 ------HGEPRHLKECFHCHKSNELA------TSKRRLSHQPLQWVVEN-- 422
NIRMNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTNVVVRSGGSCLYVPPGI 142
         94 KLRWDPMEYDGIETLRVPADKIWKPDIVLYNNAVGDFQVEGKTKALLKYNGMITWTPPAI 153
                                                                                                                                                                                                                                                     489 VAVLL 493
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Search completed: May 7, 2004, 11:36:33 Job time : 10.3565 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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OM protein - protein search, using sw model

7, 2004, 11:30:03 ; Search time 31.472 Seconds (without alignments) 5022.709 Million cell updates/sec Мау Run on:

US-09-303-232-6 2640 Perfect score: Title:

1 MAPMLAALALLALLPVSEQG......LFTIIATVAVLLSAPHIIVQ 501 Sequence:

Gapop 10.0 , Gapext 0.5 **BLOSUM62** Scoring table:

1017041 seqs, 315518202 residues Searched:

1017041 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SPTREMBL 25:* Database

sp_archea:*
sp_bacteria:*
sp_fung1:*
sp_human:*
sp_invertebrate:*
sp_mammal:* sp_unclassified:* vertebrate:* rvirus:* bacteriap:* sp_organelle:* sp_phage:* sp_rodent:* sp plant:* sp_virus:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

sp_archeap:*

			Description	09xzi4 heliothis v	O8t7s1 drosophila	_		O86mn8 drosonbila	O8t780 drosophila	OSt7r9 drosophila	O9v179 drosophila	Ogwaia heliothie					Objhde min amending	ORAGAS macaca mile	Q7t2u0 fugu rubrip
SUMMARIES			er er	Q9XZ14	Q8T7S1	Q8T7S2	Q8T7S3	OBGMNB	OBT7S0	Q8T7R9	09VL79	69XZI3	Q86MN7	Q8T7V5	6IMA60	OSIPEZ	O9JHD6	O866A2	Q712U0
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	æ	Query	Match	100.0	83.1	82.6	82.5	82.5	82.4	81.7	69.4	68.3	68.2	68.2	67.7	64.6	47.7	47.5	47.2
			Score	2640	2194	2181	2177	2177	2176.5	2156.5	1833	1803.5	1801.5	1800.5	1786.5	1705.5	1258.5	1254.5	1245
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Transmembrane

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1226.5 1222 1222 1121 11115 11187.5 1145.5 1131.5 993.5 993.5 973.5 970.5 970.5 966.5 966.5 953.5 953.5	939.5
111122222222222222222222222222222222222	1. 4. 4. U 4. 12

ALIGNMENTS

RA SEQUENCE FROM N.A.

RA SCHULTE T. Oellers N., Adamczewski M.;

Schulte T., Oellers N., Adamczewski M.;

Schulte T., Oellers N., Adamczewski M.;

RT "Putative alpha subunits of insect nicotinic acetylcholine receptors

RT "Outer insect nicotinic acetylcholine receptor alpha subunits.";

RT SUBCELICIAR LOCATION: INFEGRAL MEMBRANE PROTEIN BY SIMILARITY.

C. -- SUBCELICIAR LOCATION: INFEGRAL MEMBRANE PROTEIN BY SIMILARITY.

C. -- SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.

DR GO; GO:0016621; C:integral to membrane; IEA.

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005216; F:ion channel activity; IEA.

DR GO; GO:0005216; P:synaptic transmission; IEA.

C. -- L. SIMILARITY: DE GO; GO:0005216; P: DR GO; DR GO:0005216; P: DR GO; GO:0005216; P: DR GO; GO:0005216; P: DR GO; DR GO:0005216; P: DR GO; GO:0005216; P: DR GO; GO:0005216; P: DR GO; DR GO:0005216; P: DR GO; GO:0005016; P: DR GO; GO:0005016; P: DR GO; DR GO:0005016; P: DR 01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-NOV-1999 (TrEMBLrel. 24, Last sequence update)
01-UN-2003 (TrEMBLrel. 24, Last annotation update)
Putative nicotinic acetylcholine receptor alpha 7-2 subunit.
Heliothis virescens (Noctuid moth) (Owlet moth).
Enkaryota, Metazoa, Arthropoda; Hexapoda; Insecta; Pterygota;
Noctuidae, Heliothinae; Heliothis.
NOEL TaxID=7102; InterPro; IPR006202; Neur_chan LBD.
InterPro; IPR006202; Neur_chan LBD.
InterPro; IPR006029; Neur_chan LBD.
Pfam; PF02931; Neur_chan LBD; 1.
Pfam; PF02922; Neur_chan memb; 1.
PRINTS; PR00252; NEURONGHANNEL.
TIGRFAMS; TIGR00860; LIC; 1.
PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Glycoprotein; Ionic channel; Postsynaptic membrane; Receptor; 501 AA. PRT; PRELIMINARY; Q9XZI4 RESULT 1 JZX60

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PRELIMINARY;
                                                                                                                                                                                                                   Local Similarity
hes 418; Conserv
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SEQUENCE FROM N.A.
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MEDLINE-2199411; PubMed=11973307;
MEDLINE-2199411; PubMed=11973307;
MEDLINE-2199411; PubMed=11973307;
Movel Putative Nicotinic Acetylcholine Receptor Subunit Genes,
Thow and Highly Conserved Target of Adenosine Deaminase Acting on RNA-
Mediated A-to-1 Pre-mRNA Editing.";
Mediated A-to-1 Pre-mRNA Editing.";
Genetics 160:1519-1533(2002).
C:-SUBCELLIGHAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
C:-SUBCELLIGHAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
C:-SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
DR RID.; AF321447; AAM13394.1;
C:-SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
DR RIPASES; ERBIO032121; LACK-alpha-30D.
GO: GO: 0016021; C: integral to membrane; IEA.
GO: GO: 0016021; C: integral to membrane; IEA.
GO: GO: 0005230; F: extracellular ligand-gated ion channel acti. . .; IEA.
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                                                                                                                              DVDEKNOLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFD
                                                                                                                                                                                 GTYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLK
                                                                                                                                                                                                                                                          181 DEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVP
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                                                                            1 MAPMLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQII
                                                                                            MAPMLAALALLALLPVSEQGPHEKRLINALLANYNTLERPVANESEPLEVRFGLTLQQII
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                                                   Gaps
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Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Nicotinic acetylchOline receptor Dalphas subunit variant type
                        Length 501;
                                                   Indels
43CB0DC3960C78AB CRC64;
                         Score 2640; DB 5;
Pred. No. 6.9e-242;
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                                                  Mismatches
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Conservative (
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Matches 501;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63 LQQIIDVDEKNQLLITNLWLSLEWNDYNLRWNETEYGGVKDLRITPNKLWKPDVLMYNSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                303 YFNCIMEMVASSVVLTVVVLNYHHRTADIHEMPPWIKSVFLQWLPWILRMGRPGRKITRK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLVLKDEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRTLYYFF
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R GO; GO:0005216; F:ion channel activity; IEA.
R GO; GO:0006811; P:ion cransmitter receptor activity; IEA.
R GO; GO:0006811; P:ion transport; IEA.
GO; GO:0007268; P:ion transport; IEA.
R InterPro; IPR006201; Neur_channel.
R InterPro; IPR006202; Neur_channel.
R InterPro; IPR006202; Neur_channel.
R Pfam; PF02931; Neur_chan_LBD.
R Pfam; PF02932; Neur_chan_LBD.
R Pfam; PF02932; Neur_chan_memb; 1.
R PRINTS; PR00252; NEIONCHANNEL.
R TIGRRAMS; TIGR00860; LIC; 1.
R PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1.
M Glycoprofeni; Ionic channel; Postsynaptic membrane; Receptor;
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01-UDN-2003 (TrEMBLrel. 24, Last sequence update)
01-UDN-2003 (TrEMBLrel. 24, Last amnotation update)
01-UDN-2003 (TREMBLrel. 24, Last amnotation update)
01-UDN-2003 (TREMBLrel. 24, Last amnotation update)
Nicotinic acety/Lholine receptor Dalpha6 subunit variant type
NACR-ALPHA-30D OR NACRALPHA-30D OR BCDNA:GH01410 OR CG4128.
Drosophila melanogaster (Fruit fly).
Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta; Pterygota;
Diptera, Endopterary, Diptera, Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
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                                                                                                                                                                                                                                                                                                                                                                                                            48327537229573FF CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83.1%; Score 2194; DB 5;
llarity 82.6%; Pred. No. 1.7e-199;
Conservative 31; Mismatches 37;
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494 AA;
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WEDLINE=21969411; Pubmed=11973307;

A Grauso M., Reenan R.A., Culetto E., Sattelle D.B.;

"Novel Putative Nicotinic Acetylchine Receptor Subunit Genes,
"Thoughas, Dalphas and Dalpha," in Drosophila melanogaster Identify a
New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-
mediated A-to-I Free-mRNA Editing.";

Genetics 160:1519-1533 (2002).

-! SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).

-! SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.

EMBL; AF221446; AAM13393.1;

-! SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.

REMBL; AF221446; AAM1393.11.

R FlyBase; FBGN0032151; nAcR-alpha-30D.

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005201; Neur channel.

R GO; GO:0007268; P:synaptic transmission; IEA.

R GO; GO:0007268; P:synaptic transmission; IEA.

InterPro; IPR006202; Neur channel.

R InterPro; IPR006202; Neur channel.

R FRAM: PP02931; Neur chan LBD; 1.

R FRAM: PP02932; Neur chan LBD; 1.

R FRAM: PP02932; Neur chan LBD; 1.

R FRAM: PP02932; Neur chan LBD; 1.

R TIGRFAMe; TICR00680; LICE; 1.

R TIGRFAMe; PR0252; Neur chan LBD; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Glycoprotein; Ionic channel; Postsynaptic membrane; Receptor;
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81.6%; Pred. No. 2.9e-198;
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                                                                     i.
01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Niccinic acetylcholine receptor Dalpha6 subunit variant type INACR-ALPHA-30D OR MACRALPHA-30D OR BCDNA:GH01410 OR CG4128.
Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa, Archropoda, Haxapoda; Insecta; Pterygota;
Ephydroidea; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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Glycoprotein; Ionic channel; Fostsynaptic membrane; Receptor;
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81.8%; Pred. No. 6.8e-198;
ilve 33; Mismatches 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR006029; Neu Channel memb. Pfam; PF02931; Neur Chan LBD; 1. Pfam; PF02932; Neur Chan memb; 1. PRINYS; PR00252; NEIONCHANNEL. TIGRPAMS; TIGR00860; LIC; 1.
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Best Local Similarity 81.8
Matches 414; Conservative
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101 PNKLWKPDVLMYNSADEGFDGTYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQH 160
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303 YFNCIMFMVASSVVLTVVVLNYHHRTADIHEMPPWIÄSVFLQWLPWILRMGRPGRKITRK 362
                                                               TIMMNTRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRTDFR 415
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SECUENCE FROM N.A.

MEDLINE=21969411; PubMed=11973307;

Grauso M., Reenan R.A., Culetto E., Sattelle D.B.;

Grauso M., Reenan R.A., Culetto E., Sattelle D.B.;

"Novel Putative Nicotinic Acetylcholine Receptor Subunit Genes,

"Novel Putative Nicotinic Acetylcholine Receptor Subunit Genes,

Dalphas, Dalphas and Dalpha7, in Drosophila melanogaster Identify a

New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-

Mediated A-to-I Pre-mRNA Editing.";

Genetics 160:1519-1533 (2002).

-! SIMCELIULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).

-! SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF321448; AAM13395.1; -.

R F1yBase; FBM0002151; nAcR-alpha-30D.

R GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0005230; F:extracellular ligand-gated ion channel acti...;

GO; GO:0005216; F:ion channel activity; IEA.

GO; GO:0005816; F:ion channel activity; IEA.

GO; GO:0006811; P:ion transport; IEA.

GO; GO:0006811; P:ion transport; IEA.

R GO; GO:0006811; P:ion transport; IEA.

R GO; GO:0006811; P:ion transport; IEA.

R InterPro; IPR066202; Neur channel.

R InterPro; IPR066202; Neur channel.

R Pfam; PR02331; Neur chan LBD; 1.

R Pfam; PR02331; Neur chan LBD; 1.

R Pfam; PR02331; Neur chan LBD; 1.

R Pfam; PR02332; Neur chan LBD; 1.

R Pfam; PR02331; Neur chan LBD; 1.

R PRINTS; PR0660; IIC; 1.

R TIGRRAMS; TIGR0860; LIC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              35;
                                                                                                           01-JUN-2002 (TrEMBLE). 21, Last sequence update)
01-JUN-2003 (TrEMBLE). 24, Last annotation update)
Nicotinic acetylcholine receptor Dalphas subunit variant type
NACR-ALPHA-300 OR NACRALPHA-300 OR BCDNA:GH01410 OR CG4128.
Drosophila melanogaster (Fruit fly).
Bukaryota, Metazoa, Arthropoda; Hexapoda; Insecta; Pterygota;
Bohydroidea, Drosophilidae; Drosophila.
NCBI_TAXID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5; Length 509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Glycoprotein; Ionic channel; Postsynaptic membrane; Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82.4%; Score 2176.5; DB 5; Length
80.2%; Pred. No. 8e-198;
ive 31; Mismatches 37; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE8D8E0198E0C2BD
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                                                                                                                                                                                                                                                                                                                                                                      469 CLIVFTLFTIIATVTVLLSAPHIIVQ 494
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Matches 418; Conservative
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                                                                   356
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63 LQQIIDVDEKNQLLITNLMLSLEWNDYNLRWNETEYGGVKDLRITPNKLWKPDVLMYNSA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                         409 ASFGRPTTVEEHHTAIGCNHKDLHLILKELQFITARMRKADDEAELIGDWKFAAWVVDRF 468
                                    RSFVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRF 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPLPASLSLFVLLIFLAIIKESCQGPHEKRLLNHLLSTYNTLERPVANESEPLEVKFGLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                123 DEGFDGTYHTSVVVKHGGSCLYVPPGIFKSTCKMDITWFPFDDQHCEMKFGSWTYDGNQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DLVLKDEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NLIVPCVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NIIVPCVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAESMPTTSDAVPLIGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 APMLAALAL-----LALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLVLSSEDGGDLSDFITNGEWYLLAMPGKKNTIVYACCPEPYVDITFTIQIRRRTLYYFF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REMEL; AJ554209; CAD86335.1; -.

R GO; GO:0016020; C:membrane; IEA.

GO; GO:00160210; C:membrane; IEA.

GO; GO:00160210; C:membrane; IEA.

GO; GO:00160210; C:membrane; IEA.

GO; GO:00160811; P:ion transport; IEA.

InterPro; IPR006201; Neur_channel.

InterPro; IPR006202; Neur_channel.

InterPro; IPR006202; Neur_chan_IBD.

R InterPro; IPR006202; Neur_chan_IBD.

R Pfam; PF02931; Neur_chan_memb, 1.

R PRINTS; PR00252; NRIONCHANNEL.

ITGRFAMS; TIGR0860; LIC; 1.

R PROSTIE; PS00236; NEUROTR_ION_CHANNEL; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota, Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha, Bphydroidea, Drosophilidae, Drosophila.
NCBI_TaxID=7227,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 494;
                                                                                                                                                                                                                                                                                                                                                                                                                                   ol-JUN-2003 (TrEMBLrel. 24, Created)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Nicotinic acetylcholine receptor subunit Dalpha6 precursor.
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Millar N.S.,
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
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81.6%; Pred. No. 6.8e-198;
ive 35; Mismatches 38;
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                                                                                                                                                                                                                                                                                                                                                                                                 494
                                                                                                                                                                                                                                CLIVETLETIIATVTVLLSAPHIIVQ 494
                                                                                                                                                                    CLEVETLETIIATVAVLLSAPHIIVQ 501
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                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
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494
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DB 5;
          81.7%; Score 2156.5; DB 5, 77.6%; Pred. No. 6.6e-196; ive 32; Mismatches 39;
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                                                           Matches 415; Conservative
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        Query Match
Best Local Similarity
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ETLPQVSDAIPLLGTYFNCIMFMVASSVVLTVVVLNYHHRTADIHEMPPWIKSVFLQWLP 362
                                                                                                                                                                                                                                                                                                                                                                                                                          SQTAIGSS-----ASFGRPTTVEEHHTAIGCNHKDLHLILKELQFITARMRKADDEAE 468
                                                                                                                                                                                                                                                                                          ETLPQVSDAIPLLGTYFNCIMFMVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLP 340
                                                                                                                                                                                                                                                                                                                                                                                            WILRMSRPGKKITRKTIMMNTRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTAST 400
                                                                                                               TFTIMIRRRILYYFFNLIVPCVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVA
                                                                              CDMKFGSWTYDGNQLDLVLKDEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 401 GNLGPGCSIFRTDFRRSFVRPSTMEDVGGGLGSHHRELHLILRELQFITARMKKADEEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=21969411; PubMed=11973307; Grauso M.; Renan R.A.; Caletto E., Sattelle D.B.; Grauso M.; Renan R.A.; Caletto E., Sattelle D.B.; Butative Nicotinic Acetylcholine Receptor Subunit Genes, Dalphas, Dalphas and Dalpha7, in Drosophila melanogaster Identify a New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-Mediated A-to-1 Pre-mRNA Editing."; Genetics 160:1519-1533(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY)
-!- SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
-- BRBL, AF321449; AAM13396.11; --
-- FIYBase; FEGN032151; nAcR-alpha-30D.
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GO:0005230; F:extracellular ligand-gated ion channel acti.
GO:0005216, F:ion channel activity, IEA.
GO:003054; F:neurotransmitter receptor activity; IEA.
GO:0006811; P:ion transport; IEA.
GO:0007268; P:synaptic transmission; IEA.
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01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Nicotinic acetylcholine receptor Dalpha6 subunit variant type
NACR-ALPHA-30D OR NACRALPHA-30D OR BCDNA:GH01410 OR CG4128.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).

Bukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota, Meoptera, Endopterygota, Diptera, Brachycera, Muscomorpha, Ephydroidea, Drosophilidae, Drosophila.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           501
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PROSITE; PS00236; NEUROTR_ION_CHANNEL;
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InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006202; Neur chan LBD.
Pfam; PF02931; Neur chan LBD; 1.
Pfam; PF02932; Neur chan LBD; 1.
PRINTS; PR00252; NRIONCHĀNNEL.
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Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
A manatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
A manatides P.G., Scherer S.E., Ashburner M., Henderson S.N.,
A sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
B andon R.C., Rogers Y.-H.C., Blazel R.G., Champe M., Pfelffer B.D.,
A Man K.H., Doyle G. Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
A Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
A Ballew R.M., Bauch A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
Borkova D., Botchan M.R., Buuler H., Cadieu E., Center A., Chandra I.,
Rutis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Gherry J.M., Cawley S., Dahlke C., Davenport L.B., Daves S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
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                                                                                                               LOQIIDVDEKNQLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MPPWIKSVFLQWLPWILKMGRPGRKITRKTILLSNRMKELELKERSSKSLLANVLDIDDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----TISGSQTAIGSS-----ASFGRPTTVEEHHTAIGCNHKDLHLILKELQ
                                                                                      2 APMLAALAL-----LALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLT
                                                                                                                                                                                                                                                                         DEGFDGTYQTNVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQL
                                                                                                                                                                                                                                                                                                                                                                   DLVLKDEAGGDLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFF
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                                             Gaps
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                                           49;
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NACR-ALPHA-30D OR BCDNA:GH01410 OR CG4128.
NACR-ALPHA-30D OR NACRALPHA-30D OR BCDNA:GH01410 OR CG4128.
Drosophila melanogaster (Fruit fly)
Bukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
Length
                                           Indels
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01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
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PROSITE;

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Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W., RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K., A diodek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K., Harvey D., Heiman T.J., Hernandez J.R., Houck J., Houck J., Houston K.A., Howland T.J., Hernandez J.R., Houck J., Rahali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Kalush E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., Liang Y., Lia Z., Morkulov G., Milshina N.V., Mobarty C., Morris J., Mosherson D.L., RA Merkulov G., Milshina N.V., Mobarty C., Morris J., Moshen D.L., RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., RA Palazzolo M., Pittman G.S., Pan S., Pollad J., Pari V., Shen H., RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T., Shore E., Spradling A.C., Stapleton M., Strong R., Sun E., Spier B., Saviskas R., Tector C., Turner R., Venter E., Wang S., Yao Q.A., RA Wang Z.-Y., Wassarman D.A., Weilstock G.M., Weissenbach J., Ray Zheng X.H., Zhong F.N., Zhong F.N., Zhong K., Zhu S., Zhu S., Zhu S., Zhu X., Smith H.O., R. Zheng X.H., Zhong F.N., Zhong G.M., Venter J.C.;
R. T. "The genome sequence of Drosophila melanogaster.";
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Brans C.A., Gocayne J.D., Amanatides P.G., Brandon R.C., Rogers Y.,

Banzon J., An H., Baldwin D., Banzon J., Beeson K.Y., Busam D.A.,

Carlson J.W., Center A., Champe M., Davenport L.B., Dietz S.M.,

Dodson K., Dorsett V., Doup L.E., Doyle C., Dresnek D., Farfan D.,

Rerriers S., Frise B., Galle R.F., Garg N.S., George R.A.,

Gonzalez M., Houck J. Hoskins R.A., Hostin D., Howland T.J.,

Ibegwam C., Jalali M., Kruse D., Li P., Mattei B., Moshrefi A.,

McIntosh T.C., Moy M., Murphy B., Nelson C., Nelson K.A., Nunco J.,

Racleb J., Paragas V., Park S., Patel S., Pfeiffer B.,

Pacleb J., Paragas V., Park S., Patel S., Pfeiffer B.,

Rypleton M., Strong R., Svirskas R., Tector C., Tyler D.,

Williams S.M., Zaveri J.S., Smith H.O., Venter J.C., Rubin G.M.,

Sequencing of Drosophila melanogaster genome.",

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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EMBL; AE003626; AAF52817.2; -...

EMBL; AE003626; AAF52817.2; -...

EMBL; AE003626; Camebrane; IEA.

GO; GO:0016020; C:membrane; IEA.

GO; GO:0005230; F:extracellular ligand-gated ion channel acti. ..; I

R GO; GO:003594; F:newrotransmitter receptor activity; IEA.

GO; GO:00811; P:ion transport; IEA.

InterPro; IPR006201; Neur channel.

InterPro; IPR006202; Neu channel.

InterPro; IPR006202; Neu channel.

R Flam; PF02931; Neur channell.

R Pfam; PF02932; Neur channell.

R Pfam; PF02932; Neur channell.

R Pfam; PF02932; Neur channell.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Adams M.D., Celniker S.E., Gibbs R.A., Rubin G.M., Venter C.J., Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Science 287:2185-2195(2000).
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TIGRFAMS; TIGR00860; LIC; 1.

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Schulter T., Oellers N., Adamczewski M.;
Schulter alpha subunits of insect nicotinic acetylcholine receptors
more similar to vertebrate alpha 7 subunits and C. elegans Ce21 than
to other insect nicotinic acetylcholine receptor alpha subunits.";
Submitted (APR-1999) to the EMBL/GenBank/DBD databases.
-: SubcEtLULAR LOCATION: INTERRAL MENRANB PROTEIN (BY SIMILARITY)
-: SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0016021; C:integral to membrane; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             353 TRKTIMMNTRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      469 ---ASFGRPITVEEHHTAIGCNHKDLHLILKELQFITARMRKADDEAELIGDWKFAAMVV
                                                                                                                    4 MLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVD
                                                                                                                                                 11 LFVLLIFLATIKESCOGPHEKRLINHLLSTYNTLERPVANESEPLEVKFGLTLQQIIDVD
                                                                                                                                                                                                           GGDLSDFITNGEWYLIGM-PGKKNTITYACCP------EPYVDVTFTIMIRRR
                                                                                                                                                                                                                                                                                                                                                                                                                                   240 ILFFQFNCAMCANLIDGPTGLHIAAGFGRETDAGRNYTTIINSISKPCRRVHADNVGCCS
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Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia; Noctuoidea;
Noctuidae; Heliothinae; Heliothis.
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96;
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01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last amnotation update)
butative nicotinic acetylcholine receptor alpha 7-1 subunit.
Heliothis virescens (Noctuid moth) (Owlet moth).
                                                  Length 554;
                                                                                                                                                                                                                                                                                                                                                              GGDLSDFITNGEWYLLGYHAGKEEYDSLRLLPRTICRYHLYYTNSSPYI--
                                                          4e-165;
nhes 67; Indels
            D6C63EB7F5B32A35 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                   230 TLYYFFNLIVPCVLISSMALL----GFTLPPDSGEKLT---
                                                  DB 5;
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                                                                                 36; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       473 DRFCLFVFTLFTIIATVAVLLSAPHIIVQ 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      526 DRFCLIVFTLFTIIATVTVLLSAPHIIVQ 554
PS00236; NEUROTR_ION_CHANNEL; 1.554 AA; 63236 MW; D6C63EB7FE
                                                                   Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                  69.4%;
65.0%;
                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7102;
                                                                                   370;
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                  SEQUENCE
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                                                                                       Matches
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Q8T7V5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
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                              RAP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTYQINVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLK 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APMLAALALLALLPVSEQ-GPHEKRLLINALLANYNTLERPVANESEPLEVRFGLTLQQII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APAGILLILCILWPRGARCGYHEKRLIHHILDHYNVLERPVVNESDPLQLSFGLTLMQII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEAGGDLSDF1TNGEWYL1GMPGKKNT1TYACCPEPYVDVTFT1M1RRRTLYYFFNL1VP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MFMVASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 PSTMEDVGGGLGSH-----HRELHLILRELQFITARMKKADEBAELISDWKFAAMVVDRF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CVLISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   371 PPPPDLELRERSSKSLLANVLDIDDDFRH----PQAQQ-----PQCCRY---YRGG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
R GO; GO:0005216; F:ion channel activity; IEA.

R GO; GO:000594; F:neurotransmitter receptor activity; IEA.

GO; GO:0006881; P:ion transport; IEA.

GO; GO:0006881; P:ion transport; IEA.

R GO; GO:0007268; P:synaptic transmission; IEA.

InterPro; IPR006201; Neur channel.

R InterPro; IPR006202; Neur channel.

R Pfam; PF02931; Neur chan LBD.

R Pfam; PF02931; Neur chan LBD.

R Pfam; PF02932; Neur chan LBD.

R Pfam; PF02932; Neur chan LBD.

R TIGREAMS; TIGR00840, LLC; LLC; N.

R Glycoprotein; LC; LLC; LLC; N.

W Glycoprotein; Lonic channel; Postsynaptic membrane; Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68.3%; Score 1803.5; DB 5; Length 496; 68.7%; Pred. No. 2.2e-162; live 53; Mismatches 78; Indels 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-007-2003 (TrEMBLrel. 24, Last sequence update)
01-007-2003 (TrEMBLrel. 25, Last sequence update)
Nicotinic acetylcholine receptor subunit Dalpha7 precursor.
NACRALPHA-18C.
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Haxapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      496 AA; 56347 MW; 8032FED8515A6210 CRC64;
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Best Local Similarity
Matches 347; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       352
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244 ISSMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFM 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----VGGGL-----GSHHRELHLILRELQFITA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 435 MYRQG-----DDGSVGPVGPAGPVVDGRLHEAISHTCLTSSAEYELALILKELRWITE 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80 EKNQLLITNIWLKLEWNDMNLRWNSSEFGGVRDLRIPPHRIMKPDVLMYNSADEGFDGTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260 IASMALLGFTLPPDSGEKLSLGVTILLSLTVFLNMVAETMPATSDAVPLLGKYFNCIMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304 VASSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGK------KI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        380 SSASGEKKQQIQNVELKERSSKSLLANVLDIDDDFR-----CNHRCASATLPHQPTYYRT
                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
NICOTINIC ACETYLCHOLINE RECEPTOR SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 MLAALALLALLPVSEQGPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGDLSDFIINGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              353 TRKTIMMNTRMRELELKERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Nicotinic acetylcholine receptor Dalpha5 subunit.
NACR-ALPHA-34E OR NACRALPHA-34E OR BG:DS05899.5 (CG4498 OR CG16878 OR CG32975.
Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      451 RMKKADEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHIIV 500
                                     EMBL; AJ55410; CAD86936.1; -...

R GO; GO:0016020; C:membrane; IEA.

GO; GO:0015020; C:membrane; IEA.

GO; GO:00150594; F:meurotransmitter receptor activity; IEA.

GO; GO:001691; P:ion transport; IEA.

GO; GO:0006811; P:ion transport; IEA.

R InterPro; IPR06620; Neur_channel.

R InterPro; IPR06620; Neur_channel.

R Pfam; PF02931; Neur_channel.memb.

R Pfam; PF02931; Neur_chan lab.

R Pfam; PF02931; Neur_chan memb; 1.

R Pfam; PF02931; Neur_chan memb; 1.

R R STONTS; PR00025; NRIONCHĀNNEL.

R PROSITE; PS00226; NGURCHĀNNEL.

R PROSITE; PS00226; NGURCHĀNNEL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79; Indels
Millar N.S.;
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                               69D2C39746BB74D7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68.2%; Score 1801.5; DB 5 65.5%; Pred. No. 3.9e-162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 68.2%; Score 1801.5; Best Local Similarity 65.5%; Pred. No. 3.9e Matches 347; Conservative 59; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Æ
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                                                                                                                                                                                                                                                                                                                                                                                         35
542
                                                                                                                                                                                                                                                                                                                                                             Signal; Receptor.
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AC Q6
DT 01
DT 01
DE N:
GN N:
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Q9VWI9
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Q9VWI9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ------MRELELKERSSKSLLANVLDIDDFRHG--PPPPNSTASTGNLGPGCSIFRTD 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             414
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FRRSFVRPSTMEDVG--GGLGS------HHR-----ELHLILRELQFITARMKKA 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65
                                                                                                                                                                                                                                                         GO:0016021; C:integral to membrane; IEA.
GO:0005230; F:extracellular ligand-gated ion channel acti. . .; IEA.
GO:0005216; F:ion channel activity; IEA.
GO:0010594; F:neurotransmitter receptor activity; IEA.
GO:0006811; P:ion transport; IEA.
GO:0007268; P:synaptic transmission; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SSVVSTILILNYHHRNADTHEMSEWIRIVFLCWLPWILRMSRPGRPLILEFPTTPCSDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 LLALLPVSEQ----GPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     295 ILIYLNLSAKVCLAGYHEKRILHDLLDPYNTLERPVLNESDPLQLSFGLTLMQIIDVDEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NVVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DLSDFITNGEWYLIGMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SSVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRK---TIMMNTR
                                                                                                MEDLINE=21969411; PubMed=11973307; Grauso M., Reenan R.A., Culetto E., Sattelle D.B.; Grauso M., Reenan R.A., Culetto E., Sattelle D.B.; Novel Putarive Nicotinic Acetylcholine Receptor Subunit Genes, Dalpha5, Dalpha6 and Dalpha7, in Drosophila melanogaster Identify a New and Highly Conserved Target of Adenosine Deaminase Acting on RNA-Mediated A-to-I Pre-mRNA Editing."; Genetics 160:1519-1533 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                 -!- SUBCECLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE LIGAND-GATED IONIC CHANNEL FAMILY.
EMBL; AF272778; AAM13390.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 5; Length 807;
Neoptera; Endopterygota; Hexapoda; Insecta; Pterygota; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            31ycoprotein; Ionic channel; Postsynaptic membrane; Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     456 DEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVLLSAPHIIV 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        807 AA; 91223 MW; C8B4F6B34287C8C8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Score 1800.5; DB 5;
; Pred. No. 8.6e-162;
61; Mismatches 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                               ION CHANNEL; 1.
                                                                                                                                                                                                                                                                                                                                           InterPro; IPR006201; Neur channel.
InterPro; IPR006202; Neur chan LBD.
InterPro; IPR006029; Neur chan LBD.
Pfam; PP02931; Neur chan LBD; 1.
Pfam; PF022932; Neur chan LBD; 1.
                                                                                                                                                                                                                                               FlyBase; FBgn0028875; nAcR-alpha-34E.
                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00252; NRTONCHANNEL.
TIGREAMS; TIGRO0860; LIC; 1.
PROSITE; PS00236; NEUROTR ION C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68.2%;
66.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 66.3
Matches 348; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transmembrane
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RAMENINE-20196066; Pubbed-10731132;
RAMENINE-20196066; Pubbed-10731132;
RAMENINE-20196066; Pubbed-10731132;
RAMENINE-20196066; Pubbed-10731132;
RAMENINE-20196066; Pubbed-10731132;
RAMEND-106.16; Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RAMEND-106.16; Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RAMEND-106.16; Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RAMEND-106.16; Mortman J.R., Hardell M.D., Zhang Q., Chen L.X.,
RAMEND-106.16; Mortman J.R., Bares R.G., Chample M., Pfeiffer B.D.,
RAMEND-10716.16; Baxendal J., Baytaktarogulu L., Basaley E.M.,
RAMENTI J.R., Baud A., Baxendal J., Baytaktarogulu L., Basaley E.M.,
RAMENTS K.C., Busam D.A., Butler H., Cadieu E., Center A., Changam D.A., Butler H., Cadieu E., Center A., Changam D.A., Butler H., Cadieu E., Center A., Changam D.E., Downess M., Dudson K., Doup L.E., Downess M., Dayan-Rocha S., Dunkov B.C., Dunn P.,
RAMEND M., Cangleica C.C., Ferraz C., Ferriara S., Pleischmann W.,
RAMENIS K.C., Gabrielian A.B., Garg N.S., Gelbart M.M., Glasser K.,
RAMENIS K., Gong F. Gorrell J.H., Wei M.-H., Ibegwam C.,
RAMENIS M.C., Harvey D., Heiman T.J., Herrandez J.R., Harris M.,
Alaris M.L., Harvey D., Heiman T.J., Herrandez J.R., Harris M.,
Alaris M.L., Harvey D., Heiman T.J., Wei M.-H., Ibegwam C.,
Lea Y., Leai Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
Alalai M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
Alaris M.L., Lexitsky A.A., Li J., Li Z., Liang Y., Lin X.,
Alaris M.D., Houston K.A., Nixon K., Nusskern D.R., Pacieb J.R.,
Alazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Rachel M.,
RAMEND D., Remington K., Suuders M., Suchel H.,
RAMEND D., Welsen M., Shuger M., Shen H.,
RAMEN D., Remington K., Sauders R., Well S., Shen H.,
RAMEN D., Melland J.S., Zhan M., Stung G., Zhu X., Shen H.,
RAMEN D., Melland J.S., Zhan M., Stung G., Zhu X., Zhu S., Zhu X., Zhu X., Zhu R., Shence 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Celniker S.B., Adams M.D., Kronmiller B., Wan K.H., Holt R.A., Bvans C.A., Gocayne J.D., Amanatides P.G., Brandon R.C., Rogers Y., Bwans C.A., Gocayne J.D., Amanatides P.G., Brandon R.C., Rogers Y., Banzon J., An H., Baldwin D., Banzon J., Beeson K.Y., Busam D.A., Carlson J., M., Center A., Champe M., Davenport L.B., Dietz S.M., Dodson K., Dorsett V., Doup L.E., Doyle C., Dresnek D., Farfan D., Ferriera S., Frise E., Galle R.F., Garg N.S., George R.A., Gonzalez M., Houck J., Hoskins R.A., Hostin D., Howland T.J., McIntosh T.C., May M., Murphy B., Nelson C., Nelson K.A., Nunco J., Paragas V., Park S., Patel S., Ffeiffer B., Scheeler F., Stapleton M., Strong R., Svirskas R., Tector C., Tyler D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    NACR-ALPH-18C OR CG8082 OR CG8109 OR CG32538.
Drosophila melanogaster (Fruit fly).
Bukaryota; Mecazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
762 DECNDIANDWKFAAMVVDRLCLIIFTMFAILATIAVLLSAPHIIV 806
                                                                                                                                                                                                                                                                                                                                                                                   Last annotation update)
                                                                                                                                                                                                                                                                                                                                            Last sequence update)
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MEDLINE=20196006; Pubmed=10731132;
                                                                                                                                                                                                                                                    (TrEMBLrel, 13, C
                                                                                                                                                                                                                                                                                                                                                                                   24,
                                                                                                                                                                                                                 PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                               CG32538 protein.
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RMEL, ABOUSELL; AAA48950.2; -.

RMEL, ABOUSELL; AAA48950.2; -.

R FlyBase; FBGH0031014; nAcR-alpha-18C.

R GO; GO:0016020; c:membrane; TEA.

GO; GO:0016020; F:extracellular ligand-gated ion channel acti. .; IEA.

GO; GO:0005230; F:extracellular ligand-gated ion channel acti. .; IEA.

GO; GO:0005230; F:extracellular ligand-gated ion channel acti. .; IEA.

GO; GO:0005230; F:extracellular ligand-gated ion channel acti. .; IEA.

InterPro; IPR006202; Neur_channel.

InterPro; IPR006202; Neur_channel.

InterPro; IPR006202; Neur_channel.

R Fam; PF02931; Neur_chan_memb, PEam; PF02931; Neur_channel.

R Fam; PF02931; Neur_chan_memb, I.

R Fam; PF02931; Neur_chan_memb, I.

R Fam; PF02932; Neur_chan_memb, I.

R FRM; PR00212; MISTONIARNEL.

ITGRFAMS; TICR006860; LIC; I.

R PROSITE; PS00236; NEUROTR ION CHANNEL; I.

R PROSITE; PS00236; NEUROTR ION CHANNEL; I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80 NDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYQTNVVVRSGGSCLYVP 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140 PGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGDLSDFITNGEWYLI 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     219 GVPGKRNEIYYNCCPEFYIDITFAILIRRKTLYYFFNLIVPCVLIASMALLGFTLPPDSG 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GMPGKKNTITYACCPEPYVDVTFTIMIRRRTLYYFFNLIVPCVLISSMALLGFTLPPDSG 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKLTLGVTILLSLTVFLNLVAETLPQVSDAIPLLGTYFNCIMFMVASSVVLTVVVLNYHH 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RTADIHEMPQWIKSVFLQWLPWILRMSRPGK------KITRKTIMMNTRMRELEL 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KERSSKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRTDFRRSFVRPSTMED-- 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----VGGGL-----GSHHRELHLILRELQFITARMKKADEEAELISDWK 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            447 VGPVGPAGPVVDGRLHEAISHTCLTSSAEYELALILKELRWITEQLKKEDETSDITRDWK 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 GPHEKRLLNALLANYNTLERPVANESEPLEVRFGLTLQQIIDVDEXNQLLITNIWLSLEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                         Misra S., Crosby M.A., Matthews B.B., Bayraktaroglu L., Campbell K., Hradecky P., Huang Y., Kaminker J.S., Prochnik S.E., Smith C.D., Tupy J.L., Bergman C., Barman B., Carlson J.W., Celniker S.E., Clamp M., Drysdale R., Emmert D., Frise B., de Grey A., Harris N., Kronmiller B., Marshall B., Millburn G., Richter J., Russo S., Searle S.M.J., Smith B., Shu S., Smutniak F., Whitfield E., Ashburner M., Gelbart W.M., Rubin G.M., Mungall C.J., Lewis S.E., Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
          Venter J.C., Rubin G.M.;
                                                                                                                                                                                                                                                                                                             Adams M.D., Celniker S.E., Gibbs R.A., Rubin G.M., Venter C.J., Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 5; Length 545;
Williams S.M., Zaveri J.S., Smith H.O., Venter J.C., Rub "Sequencing of Drosophila melanogaster genome."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70; Indels
                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1786.5; DB Pred. No. 1e-160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67.78;
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                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
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RX SUCTORNER, FORM N.A.

RAMAGEMEN M.D., Celniker S.E., Hip P.W., Broans C.A., Gocayne J.D.,

RAMAGEMS M.D., Celniker S.E., Hip P.W., Hoskins R.A., Galle R.F.,

RAMAGEMS M.D., Celniker S.E., Lip P.W., Hoskins R.A., Galle R.F.,

RAMAGEMS M.D., Celniker S.E., Lip P.W., Hoskins R.A., Galle R.F.,

RAMAGEMS M.D., Celniker S.E., Lip P.W., Hoskins R.A., Galle R.F.,

RAME SUCTOR G.G., Wordman J.R., Yandell M.D., Zhang Q., Chen L.X.,

RAME K.H., Doyle C., Baxer B.G., Helf G., Nelson C.R., Gabor G.L.,

RAME R.H., Benos P.V., Berman B.P., Bandarin D., Beasley E.M.,

RAME BEESON K.N., Canley S., Dalke C. D., Brocketen P., Borkova D., Botchen M.R., Bouck J., Brokstein P., Brocktier P.,

RAME BEESON K.N., Canley S., Dalke C. Davenport L.B. Daviss P.,

RAME BEESON K.N., Canley S., Dalke C. Davenport L.B., Daviss P.,

RAME B. Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,

RAME Dodson K., Doup L.E., Downes M., Dugan-Rochia S., Plaischmann W.,

RAME Dodson K., Gabrielian A.E., Gary N.S., Gelbart W.M., Glasser K.,

RAME Dodson K.J., Evangelista C.C., Ferraz C., Ferriera S., Plaischmann W.,

RAME A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.

RAMETIS N.L., Marshush F., Ratpen G.H., Ke Z., Kennison J.A., Kectohum K.A.,

Alalali M., Kalush F., Ratpen G.H., Ke Z., Kennison J.A., Kectohum K.A.,

Alalali M., Kalush F., Ratpen G.H., Ke Z., Kennison J.A., Markon D.,

RAME B. R., Kodirac C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,

Lasko P., Lei Y., Leviteky A.A., Li J., Li Z., Liang Y., Lin X.,

Luk K., Matten B., McIntosh T.C., McLeod M.P., Murny D.M., Nelson D.L.,

RAME B. R., Mount S.M., Murny B., Murphy L., Murny D.M., Nelson D.L.,

RAME B. R., Reinington K., Saunders R., Vennison J., Wang X.,

RAME B. R., Schare J. S., Pan S., Pollard V., Puri Y., Respective S., Wang Z.Y., Wassarman D.A., Weinstook G.M., Weinsenbech J.,

RAME S., Siden-Kiamos I., Simpson M., Skupski M.P., Wang Z.Y., Wassarman D.A., Weinstook G.M., Weinsenbech J.,

RAME S., Zaveri J.S., Zhong K., Zhong K., Sun B.,

Rame B.C., Siden-Kiamos I., Simpson M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Earliker S.E., Adams M.D., Kronmiller B., Wan K.H., Holt R.A.,
Bvans C.A., Gocayne J.D., Amanatides P.G., Brandon R.C., Rogers Y.,
Banzon J., An H., Baldwin D., Banzon J., Beeson K.Y., Busam D.A.,
Carlson J.W., Center A., Champe M., Davenport L.B., Dietz S.M.,
Dodson K., Dorsett V., Doup L.E., Doyle C., Dresnek D., Farfan D.,
Ferriera S., Frise E., Galle R.F., Garg N.S., George R.A.,
Gonzalez M., Houck J., Hoskins R.A., Hostin D., Howland T.J.,
McIntosh T.C., Moy M., Wurphy B., Nelson C., Nelson K.A., Nunoo J.,
Pacleb J., Paragas V., Park S., Patel S., Pfeiffer B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa; Arthropoda; Haxapoda; Insecta; Pterygota;
Neoptera; Endopteryyota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NACR-ALPHA-30D OR NACRALPHA-30D OR BCDNA:GH01410 OR CG4128.
                                                                                                                                                                                                                                                                                                                                         01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                    540
                                                467 FAAMVUDRFCLFVFTLFTIIATVAVLLSAPHIIV
                                                                                                                                                                                                                                                                         PRELIMINARY;
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                                                                                                                                                                                         RESULT 13
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08 19E2
09 19E3
09 19E
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C9353E5136D620E3 CRC64;
                                                                                                                                                                                                        01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Nicotinic acetylcholine receptor subunit alpha 7.
411 SKSLLANVLDIDDDFRH-----TISGSQTAIGSS-
                                                                                                                                                                                 502
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                                                                                                                                                                                                  O9JHD6;
01-0CT-2000 (TrEMBLrel. 15,
01-0CT-2000 (TrEMBLrel. 15,
01-0CT-2000 (TrEMBLrel. 24,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 49.8
Matches 250; Conservative
                                                                                                                                                                                    PRELIMINARY;
                                                                                                        517 LSAPHIIVQ 525
                                                                                    501
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VVINYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMRELELKERS 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            373 SKSLLANVLDIDDDFRHGPPPPNSTASTGNLGPGCSIFRIDFRRSFVRPSTWEDVGGGLG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240 -----ILFFQFNCAMCANLIDGPTGLHIAAGFGRETDAGRNYTTIINSISKPCRRVH 291
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                  ElyBase; FBQT0032151; nACR-dapha-30D.

GO; GO:0016020; F:extracellular ligand-gated ion channel acti. . .; IEA.

GO; GO:0016021; F:extracellular ligand-gated ion channel acti. . .; IEA.

GO; GO:000520; F:extracellular ligand-gated ion channel acti. . .; IEA.

GO; GO:0006811; F:incurotransmitter receptor activity; IEA.

InterPro; IPR006201; Neur_channel.

InterPro; IPR006202; Neur_channel.

InterPro; IPR006202; Neur_channel.

Ffam; PF02931; Neur_chan_LBD; 1.

PFfam; PF02931; Neur_chan_memb; 1.

PRINTS; PR00252; NRIGNCHANNEL.

PROSITE; PS00236; NRIGNCHANNEL.

SRQUENCE 525 AA; 60135 MW; CF95283C56EA90A9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPLPASLSLFVLLIFLAIIKESCQGPHEKRLANHLLSTYNTLERPVANESEPLEVKFGLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DLVLNSEDGGDLSDFITNGEWYLLGYHAGKEEYDSLRLLPRTICRYHLYYTNSSPYI---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 APMLAALAL----LALLPVSEQGPHEKRLINALLANYNTLERPVANESEPLEVRFGLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LQQIIDVDEKNQLLITNIWLSLEWNDYNLRWNDSEYGGVKDLRITPNKLWKPDVLMYNSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DLVLXDEAGGDLSDFITNGEWYLIGM-PGKKNTITYACCP-------EPYVDVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  292 ADNVGCCSSYRYTHTILKRYSLKYGPIGRTIDHYYOC-RAESTYFNCIMFMVASSVVLTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                               Hradecky P., Huang Y., Kaminker J.S., Prochnik S.E., Smith C.D., Tupy J.L., Bergman C., Berman B., Carlson J.W., Celniker S.E., Clamp Y.J., Bergman C., Berman B., Carlson J.W., Celniker S.E., Krommiller B., Marshall B., Milburn G., Richter J., Russo S., Saarle S.M.J., Smith E., Shu S., Smutniak F., Whitfield E., Ashburner M., Gelbart W.M., Rubin G.M., Mungall C.J., Lewis S.E., Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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 Phouanenavong S., Pittman G.S., Puri V., Richards S., Scheeler F. Stapleton M., Strong R., Svirskas R., Tector C., Tyler D., Milliams S.M., Zaveri J.S., Smith H.O., Venter J.C., Rubin G.M.; "Sequencing of Drosophila melanogaster genome."; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                         Adams M.D., Celniker S.E., Gibbs R.A., Rubin G.M., Venter C.J.; Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 5; Length 525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84; Indels
                                                                                                                                                                                                                                                                                                                  FlyBase;
Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   64.6%; Score 1705.5; DB 5; 63.2%; Pred. No. 4.9e-153; ive 43; Mismatches 84;
                                                                                                                                                                                                                                                                                                                                           EMBL; AE003626; AAN10709.1;
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                                                                                        SEQUENCE FROM N.A.
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SUBMITTED (JAN-2000) to the EMBL/GenBank/DDBJ databases.

-1- SUBCELLULAR LOCATION: INTEGRAL MENGRAND PROTEIN (BY SIMILARITY).

C. -1- SUBCELLULAR LOCATION: INTEGRAL MENGRAND PROTEIN (BY SIMILARITY).

C. -1- STATEZES BEST OF THE LIGAND-GATED IONIC CHANNEL FAMILY.

BMBL; AF225980; AAF35885.1; -..

MGD; MGI:99779; Chrna7.

MGD; MGI:99779; Chrna7.

CO:0016021; C:integral to membrane; IEA.

GO; GO:0016230; F:extracellular ligand-gated ion channel acti. ..; IEA.

MGO; GO:0016230; F:extracellular ligand-gated ion channel acti. ..; IEA.

GO; GO:0016231; F:ion channel activity; IEA.

GO; GO:0016281; F:ion transport; IEA.

GO; GO:0002588; F:sneurotransmitter receptor activity; IEA.

GO; GO:0002588; P:snaptic transmission; IEA.

InterPro; IPR006201; Neur_channel.

InterPro; IPR006202; Neur_channel.

R InterPro; IPR006202; Neur_channel.

R Ffam; PF02931; Neur_chan_memb; 1.

R TIGRFAMS; TIGR00860; LIC; 1.

TIGRFAMS; TIGR00860; LIC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70 QVLTINIWLQMSWIDHYLQWNMSEYPGVKNVRFPDGQIWKPDILLYNSADERFDAIFHIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 127 VVVRSGGSCLYVPPGIFKSTCKMDIAWFPFDDQHCDMKFGSWTYDGNQLDLVLKDEAGGD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 LALAAALLHVSLQGEFQRRLYKELVKKYNPLERPVANDSQPLTVYFSLSLQIMDVDEKN
                                                                                                             --- ASFGRPTTVEEHHTAIG
                                                                      SHHRELHLILRELQFITARMKKADEEAELISDWKFAAMVVDRFCLFVFTLFTIIATVAVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=97189245; PubMed=9037516;
Stitzel J.A., Farnham D.A., Collins A.C.;
Stitzel J.A., Farnham D.A., Collins A.C.;
"Linkage of strain-specific nicotinic receptor alpha 7 subunit
restriction fragment length polymorphisms with levels of alpha-
bungarotoxin binding in brain.";
Brain Res. Mol. Brain Res. 43:30-40(1996).
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PROSITE; PS00236; NEUROTR ION CHANNEL; 1.
Glycoprotein; Ionic channel; Postsynaptic membrane; Receptor;
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49.8%; Pred. No. 1.4e-110;
iive 77; Mismatches 148; Indels
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186
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                                                                                                                                                                                                       MALLGFTLPPDSGEKLTLGVTILLSLTVFLNLVABTLPQVSDAIPLLGTYFNCIMFMVAS 306
                                                                                                                                                                                                                                        BLKERSS----KSLLLANVLDIDDDFR-----HGPPPPNSTASTGNLGPGCSIFRTDFRRS 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           423 GTHPSDGDP------DLAKILEBVRYIANRFRCQDESEVICSEWKPAACVVDRLCL 472
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                                                                                                                        SVVLTVVVLNYHHRTADIHEMPQWIKSVFLQWLPWILRMSRPGKKITRKTIMMNTRMREL
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Proskocil B.J., Sekhon H.S., Keller J.A., Jia Y., Blakely R.D.,
Lindstrom J., Spindel E.R.;
"An Intrinsic Non-neuronal Nicotinic Cholinergic Signaling System in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.

R Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.

R EMBL; AF466623; AAO84497.1; -...

GO; GO:0016020; C:membrane; IEA.

GO; GO:0016020; C:membrane; IEA.

R GO; GO:0005230; F:extracellular ligand-gated ion channel acti. .;

R GO; GO:0005230; F:extracellular ligand-gated ion channel acti. .;

R GO; GO:0005230; P:extracellular ligand-gated ion channel acti. .;

R GO; GO:0005230; P:extracellular ligand-gated ion channel acti. .;

R GO; GO:0005231; Neur channel memb.

R InterPro; IPR006202; Neur channel memb.

R Fam; PF02231; Neur chan memb; 1.

PRINTS; PR00252; NRIONCHANNEL.

R TIGRPAMS; TIGR00860; LIC; 1.

R PRINTS; PS00236; NEUROTR_ION_CHANNEL; 1.
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Mammalia, Butheria, Primates, Catarrhini, Cercopithecidae,
Cercopithecinae, Macaca.
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01-UJN-2003 (TrEMBLrel. 24, Created)
01-UJN-2003 (TrEMBLrel. 24, Last sequence update)
01-UJN-2003 (TrEMBLrel. 24, Last annotation update)
Nicotinic acetylcholine receptor alpha7.
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Search completed: May 7, 2004, 11:38:39 Job time : 32.472 secs This Page Blank (uspto)

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GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
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- nucleic search, using frame_plus_p2n model OM protein

8, 2004, 11:50:34 ; Search time 3498.21 Seconds (without alignments) 4276.744 Million cell updates/sec May Run on:

2640 1 MAPMLAALALLALLPVSEQG......LFTIIATVAVLLSAPHIIVQ 501 US-09-303-232-6 Perfect score: Sequence:

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27513289 seqs, 14931090276 residues Searched:

55026578 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Command line parameters:

-MONDEL-frame+ p2n...model -DEV=xlh
-Q=/cgn2 1/USPTO_spool/US09303232/runat_07052004_101110_23893/app_query.fasta_1.2261
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-UNITS=bits -START=1 -FND=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-DOCALIGN=200 -THR_SCORE=pct -THR_NAX=100 -THR_MIN=0 -ALIGN=15 -MODE=LOCAL
-OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000
-UNGM=Ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000
-USER-US09303232_@CGN 1 1.4577 @runat_07052004_101110_23893 -NGPU=6 -ICPU=3
-NO_WMAP -LARGEQUERY -NEG SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

ALIGNMENTS

RESULT 1 BG632919/c LOCUS DEFINITION

BG632919
GH16126.3prime GH Drosophila melanogaster head pOT2 Drosophila melanogaster cDNA clone GH16126 3 similar to CG4128: FBan0004128 bion channel' located on: 2L 30D1-30E1;: 04/10/2001, mRNA sequence. BG632919.1 GI:13758409 EST. VERSION KEYWORDS SOURCE ORGANISM ACCESSION

Drosophila melanogaster (fruit fly) Drosophila melanogaster Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

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Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashiro,H., Itoh,M., Suni,N., Ishii,Y., Nakamura,S., Hazama,M., Nishine,T., Harada,A., Yamamoto,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E., Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y. RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AKO53497

Mus musculus 0 day neonate eyeball cDNA, RIKEN full-length enriched library, clone:El30103El4 product:NEURONAL NICOTINIC ACETYLCHOLINE RECEPTOR ALPHA 3 SUBUNIT, full insert sequence.
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Mus musculus
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Ammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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GlyThrTyrPheAsnCysIleMetPheMetValAlaSerSerValValLeuThrValVal
                                                                                                                                                                                                                                                                                                                                                   165 GGAACTTATTTCAATTGCATTATGTTTATGGTGGCCTCATCAGTTGTGTCAACCATACTT
                                                                                     PhePheAsnLeuIleValProCysValLeuIleSerSerMetAlaLeuLeuGlyPheThr
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Functional annotation of a full-length mouse
Neutre 409, 685-690 (2001)
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High-efficiency full-length cDNA
Meth. Enzymol. 303, 19-44 (1999)
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                                                                                                                                                      Liawrence Berkeley National Lab
One Cyclotron Rd, Berkeley, CA 94720, USA
Fax: 510 486 6798
Email: http://www.fruitfly.org/EST, est@fruitfly.berkeley.edu
Based upon the presence of a XhoI site followed by a run of 14 or
more T residues at the beginning of the sequence, this clone was
polyadenylated. The resulting Poly-T sequence has been removed. hit
genomic AB00351: arm:X [18792641,19136447]
estimated-cyto:18A3-18G6: 0410/2001
Plate: GH.161 row. C column: 2
High quality sequence stopp: 784.
                                                                                                                                                                                                                                                                                                                                                                                                                                            /sex="maie and female"
/dev_stage="adult"
/lab_host="DHS - alpha"
/clone lib="GH Drosophila melanogaster head pOT2"
/note="Organ: head; Vector: pOT2; Site_1: EcoRI; Site_2:
XhoI; Sized fractionated cDMAs were directly ligated into pOT2. Plasmid cDNA library."
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                     1 (Dases 1 to 885)
Harvey,D., Brokstein,P., Hong,L., Evans-Holm,M., Su,C.,
Lewis,S. and Rubin,G.M.
BDGPVHMIN Drosophila EST Project
Unpublished (2001)
Other ESTs: GH16126.5prime
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227
26
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/db_xref="taxon:7227"
/clone="GH16126"
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                               Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length conys.

B 60 Asses I to 1864)

E 6 (bases 1 to 1864)

E 8 Adachi, J. Alzawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayatsu, N., Hiramoto, K., Hiramoto, T., Hiramoto, T., Hiramoto, H., Kouda, M., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Katoh, H., Kawai, J., Kojima, Y., Saltoh, H., Kodo, S., Konno, M., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohsato, N., Santo, H., Sasaki, D., Saltoh, H., Sakai, C., Sakai, K., Sakazume, N., Sogabe, Y., Tagami, M., Tagawa, A., Shiraki, T., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Rakeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Murantsu, M., and Hayashizaki, Y., Toya, T., Yasunishi, A.,
                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="MGI:2425288"
| db_xref="taxon:10090"
| clone="El30114"
| tissue_type="eyeball"
| clone_lib="RIKEN full-length enriched mouse cDNA library"
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EEIYQDITYSLYIRRLPLFYTINLIIPCLLISFLTVLVFYLDSDCGEKVTLCISVLLS
LTVFLLVITETIPSTSLVIPLIGEYLLFTMIFVTLSIVITVFVLNVHYRIPTTHTMPT
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DGTCGYCHHRRVKISNFSANLTRSSSSBSVDAVLSLSALSPBIKBAIQSVKYIABNMK
AQNVAKBIQDDWKYVAMVIDRIFLWVFILVCILGTAGLFLQPLMARDDT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues.

Please visit our web site for further details.
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RPVANVSHPVIIQFEVSMSQLVKVDEVNQIMETNLWLKQIWNDYKLKWKPSDYQGVEF
                   FANTOM Consortium and the RIKEN Genome Exploration Research
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/note="unnamed protein product; NEURONAL NICOTINIC
ACETYLCHOLINE RECEPTOR ALPHA 3 SUBUNIT (SPTR|AAL58471,
evidence: FASTY, 99.8%ID, 100%length, match=1497)
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URL:http://fantom.gsc.riken.go.jp/
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| CGGTGTCCATGCTGATGCTGATGCTGCTGCTGCCAGTGGCCAGCGCCTCGGAAGCT 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (16-JUL-2001) Yoshihide Hayashizaki, The Institute of Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Genomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to
                                Phase II Team and the
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/note="unnamed protein product; NEURONAL NICOTINIC
ACCETAL-UIB RECEPTOR ALPHA 3 SUBUNIT (SPTR|AALS8471,
evidence: FASTY, 99.8%ID, 100%length, match=1497)
                                                                                                                                              The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                             Functional annotation of a full-length mouse cDNA collection
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                                     The RIKEN Genome Exploration Research Group
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URL: http://fantom.gsc.riken.go.jp/
Location/Qualifiers
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Mus musculus 12 days embryo spinal ganglion cDNA, RIKEN full-length enriched library, clone:D130068A06 product:NEURONAL NICOTINIC ACCETYLCHOLINE RECEPTOR ALPHA 3 SUBUNIT, full insert sequence.

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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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High-effictency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
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Alignment Scores: Alignment Scores: Pred: No.: Pred: No.: Pred: No.: 970.50 Matches: 92 Best Local Similarity: 36.76\$ Mismatches: 11 Gaps: 08-09-303-232-6 (1-501) x AK051730 (1-2916)	9 proMeticanianiateualialeualialeurialeurialeurialeurialeurialialeurialialeurialialeurialialeurialialeurialialeurialialeurialialialeurialialialeurialialialialialialialialialialialialiali

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KYNCCEEIYQDITYSLYIRRLPLFYTINLIIPCLLISFLTVLVFYLPFDGGEKVTLCI
SVLLSLTVFLLVITETIPSTSLVIPLIGEYLLFTMIFVTLSIVITVFVLNVHYRTPTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Adachi, J., Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayasus, N., Hiramoto, K., Hiracoka, T., Hirozane, T., Harashida, K., Indrani, Y., Itobi, M., Kagawa, I., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Nakanira, M., Nishi, K., Nomura, K., Numazaki, A., Murata, M., Okazaki, Y., Saitoh, H., Sakai, C., Sakai, K., Ohno, M., Ohsato, Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Tanaka, T., Tagami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Muramatsu, M., and Hayashizaki, Y., Tayanishi, A., Toya, T., Yasunishi, A.,
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                                                                                                                                                                                                                                                                                                                             Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
Nature 420, 563-573 (2002)
6 (bases 1 to 3126)
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         Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai
Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y.
RIKEN integrated sequence analysis (RISA) system--384-format
sequencing pipeline with 384 multicapillary sequencer
Genome Res. 10 (11), 1757-1771 (2000)
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Encyclopedia Project of Genome Exploration Research Group in R
Genomic Sciences Center and Genome Science Laboratory in RIKEN
Division of Experimental Animal Research in Riken contributed
prepare mouse tissues.
Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
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'organism="Mus musculus"
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968 AGGCTCTGCATCCTCCCTCCCCTGACGGTCTTTCTCCTCGTGATCACCGGACC 1027 283 IcuproclivelSerAepAlalleProleuLeuGlYhrTyrPheAsnCyslaekerphe 302 1028 ATCCTCCCCCCCCCCCTCGTCGTCGTCGTGATCGGGGGGGG	JOURNAL Submitted (16-NOV-2003) Celera Ge	COMMENT This sequence was made by sequence. FEATURES Independence on allignment.	urce	/ AD_XTRE="Laxon:9606" <1>1436 /gene="CHRNA3" /locus_tag="HCM1369"		Alignment Scores: 2.2e-101 Length. Pred. No.: 957.50 Marches	c Similarity: 61.55% ocal Similarity: 41.81%	Match: 36.27% 29	73 (1-1	Qy 23 GluLysArgLeuLeuAsnAlaLeuLeuAlaAs	Db 21 GAGCACCGTCTATTTGAGCGGCTGTTTGAAG	Oy 43 AsnGluSerGluProLeuGluValArgPheGl	Db 81 AACGTGTCTGACCCAGTCATCATCGATTTCGA	QY 63 AspGluLysAsnGlnLeuLeuleThrAsnIl	Db 141 GATGAAGTAAACCAGATGATGGAGACGACAACCAACCAAC	7	Qy 103 LysLeuTrpLysProAspValLeuMetTyrAs	261	ThrAsnValValVal	Db 321 GACAAGACCAAAGCCTTACTCAAGTACACTGG		DD 381 ITTAAGAGCICCIGIAAAAICGACGIGACCIA OV 163 MetLyspheGlySerfrymhyfyraenGlyse	Qy 183 AlaGlyGlyAspLeuSerAspPhelleThrAs	Db 498 TCTTCCATGAACCTCAAGGACTATTGGGAGAG	Qy 203 GlyLysLysAsnThrIleThrTyrAlaCysCy	255	618	Qy 243 LeulleSerSerMetAlaLeuLeuGlyPheTh	
Db Cy Db 1 Cy	68 ACGCTCTGCATCTCCGTGCTCCTCTCTGACGGTCTTTCTCCTCGTGATCACCGAGACC	LeuProGlnValSerAspAlaIleProLeuLeuGlyThrTyrPheAsnCysIleMetPhe :::	MetValAlaSerSerValValLeuThrValValValLeuAsnTyrHisHisArgThrAla	AspileHisGluMetProGlnTrplleLysSerValPheLeuGlnTrpLeuProTrplle	LeuArdMetSerArgproG_vive[vel] onhther to mother to matemate and the matematemate and the matematemate and the matematematematematematematematematemate	DESCRIPTION OF THE STREET OF T	MetArggluLeuGluLeuLysGluArgSerSerLysSerLeuLeuAla		AsnValLeuAspIleAspAspAspPheArgHisGlyProProProProAsnSerThrAla	CTGCCAAGATGGGACATGT	SerThrGlyAsnLeuGlyProGlyCysSerIlePheArgThrAspPheArg	GGCTATTGCCACCACCGTAGGGTAAAAICTCAAAITTCAGT	ArgSerPheValArgProSerThrMetGluAspValGlyGlyGlyLeuGlySer	GCCAACCICACAAGAAGCICCAGIICIGAGICTGIIGAIGCIGIGTIGTGCCTGTCTGCT	HishisangdulleuHisLeulieLeuArgGluLeuGlnPheileThrAlaargMetLys 453	473	157	474 ArgPheCysLeuPheValPheThrLeuPheThrIleIleAlaThrValAlaValLeuLeu	577 CGCATTTTTCTCTGGGTTTTCATCCTGGTGTGCATTTTAGGAACTGCAGGATTATTCTG 163		AY402873 Homo sapiens CHRNA3 g genomic survey semien	AY402873 1 GI:39758856		1 (bases 1 to 1436) Lark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A.,	<pre>JOUGYM.A., Tarkenbaum,D.M., Civello,D.R., Lu,F., Murphy,B., Ferriera.S., Wang,G., Zheng,X.H., White,T.J., Sninsky,J.J., Adams,M.D. and Cargill,</pre>	Inferring nonneutral evolution from human-chimp-mouse orthol gene trios	Science 302 (5652), 1960-1963 14671302 2 (hases 1 to 1436)	Clark, A.G., Glanowski Todd, M.A., Tanenbaum	THE THE PROPERTY CANCELLO CANC

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3AGGTGTCCATGTCTCAGCTGGTGAAGGTG 140
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CTGTGGCTCAAGCAAATCTGGAATGACTAC 200
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558 GGCTACAAACATGAAATCAAGTACAACTGCTGTGAGGAGATCTACCAAGACATCACGTAC
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Conservative:
Mismatches:
Indels:
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Mus musculus CHRNA3 gene, VIRTUAL TRANSCRIPT, partial sequence,
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                                                  LeuProGlnValSerAspAlaIleProLeuLeuGlyThrTyrPheAsnCysIleMetPhe
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E Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furumo, M., Hangaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hirozane, T., Hori, F., Imotrani, K., Ishii, Y., Itoh, M., Kagawa, I., Kasukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Mateuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohsato, N., Sano, H., Sasaki, D., Shibata, K., Shinagawa, A., Shizaki, T., Sakazume, N., Sogabe, Y., Taqami, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Muramatsu, M. and Hayashizaki, Y., Tayanishi, A., Towaru, T., Yasunishi, A., Direct Submission
                                                                                                  Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Suhi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y., sequencing pipeline with 384 multicapillary sequencer General Connec Res. 10 (11), 1757-1771 (2000)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
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Rodentia, Sciurognathi, Muridae, Murinae, Mus.
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High-efficiency full-length cDNA cloning
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/clone lib="Single gene library"
/note="Vector: pDrive Cloning Vector; RT-PCR was performed using gene-specific primers flanking the open-reading frame. PCR products were subcloned into pDrive Cloning Vector and sequenced completely using M13 forward and reverse primers. Sequencing gaps were closed by re-sequencing using primers flanking the gapped areas."
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(bases 1 to 2996)
Jin,P., Fu,G.K., Wilson,A.D., Yang,J., Chien,D., Hawkins,P.R., Au-Young,J. and Stuve,L.L.

PCR isolation and cloning of novel splice variant mRNAs from known
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Catarrhini; Hominidae; Homo.
                                                                    IleLeuArgMetSerArgProGlyLysLysIleThr-ArgLysThrIleMetMetAsnTh
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Homo sapiens cDNA, mRNA sequence
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/mol_type="mRNA"
/db_xref="taxon:9606"
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Unpublished (2003)
Contact: Jin, P.
Incyte Corporation
3160 Perster Drive, Palo Alto, C/
Tel: 650 621 8639
Fax: 650 621 8965
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90134548 Single gene library CD013901
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Location/Qualifiers
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AUTHORS
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COMMENT
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	Oy 377 LeualadenValleuAsp	QY 389HisGlyProProProProAssSerThralaserThralyAssLeuGly 404	Qy 405 ProdlycysSerllePheArgThrAspPheArgArgSerPheValArgProSerThrMet 424	Qy 425 GluAspValGlyGlyGlyLeuGlySerHisArgGluLeuHisLeuIleLeuArgGlu 444	OY 445 LeuGlnPheileThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuileSerAsp 464 ::: ::::: Db 1592 GTGCACTACATTGCCGACCACCTGCGGTCTGAGGATGCTGAGGACTCTTCGGTGAAGGAGGAC 1651	Qy 465 TrpLysPheAlaAlaMetValValAspArgPheCysLeuPheValPheThrLeuPheThr 484	Qy 485 IleIleAlaThrValAlaValLeuLeu 493 ::: ::: Db 1712 TTCCTGGGGACCATCGGCCTCTTTCTG 1738	RESULT 9 AY402878 LOCUS LOCUS DEFINITION Mus musculus CHRNB4 cene, VIPPTID, TPARACPIPT nestial sections		SM	REFERENCE 1 (bases 1 to 1454) AUTHORS Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D. M., Civello, D. R., Lu, F., Murphy, B., Ferriera, S., Wano, G., Zheno, X. H., White H. T., Cainch, T.	Adams, M. D. and Cargill, M. TITLE Inferring nonneutral evolution from human-chimp-mouse orthologous gene trios	14671302 2 (bases 1 to 1454) Clark, A. G., Glanowski, S., Niel Todd, M. A., Tanenbaum, D.M. Civ	Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M. TITLE Direct Submission JOURNAL Submitted (16-NOV-2003) Celera Genomics A5 Wart Class Desired	Rockville, MD 20850, USA This sequence was made by sequencing genomic exons and them based on alignment.	FEATURES Location/Qualifiers 11454 /organism="Mus musculus"
Alignment Scores: Pred. No.: Pred. No.: Score: Score: Percent Similarity: Percent Simil	GluLys CGAGACTGAGGAC					sLeu GCAC	oPhe CTTC	uAsp : cGAC	Oy 177 LeuValLeuLysAspGluAlaGlyGlyAspLeuSerAspPhelleThrAsnGlyGluTrp 196	Oy 197 TyrLeulleGlyMetProGlyLysLysBanThrIleThrTyralaCysCysProGlubro 216	Oy 217 TyrvalAspValThrPheThrIleMetIleArgArgArgThrLeuTyrTyrPhePheAsn 236 Db 929 TACCCCGACGTCACCTACGTCATCGGGGGGCTGCCGCTCTTCTACACCATCAAC 988	Qy 237 LeuileValProCysValLeuileSerSerMetAlaLeuleuGlyPheThrLeuProPro 256	Oy 257 AspSerGlyGluLysLeuThrLeuGlyValThrIleLeuLeuSerLeuThrValPheLeu 276	Oy 277 AsnLeuValAlaGluThrLeuProGlnValSerAspAlaIleProLeuLeuGlyThrTyr 296 Db 1109 CTGCTCATCACTGAGATCATCCCGTCCACCTGGTCATCCCGCTCATCGGCGAGTAC 1168	Qy 297 PheAsnCysIleMetPheMetValAlaSerSerValValLeuThrValValValLeuAsn 316	TyrHisHisArgThrAlaAspIleHisGluMetProGlnTrpIleLysSerValPheLeu

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AK049722

Mus musculus 12 days embryo spinal cord cDNA, RIKEN full-length enriched library, clone:C530044P16 product:cholinergic receptor, nicotinic, beta polypeptide 2 (neuronal), full insert sequence.
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CyslleMetPheMetValAlaSerSerValValLeuThrValValValLeuAsnTyrHis 318
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                          444 GluLeuGlnPheileThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSer
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                    HisArgThrAlaAspIleHisGluMetProGlnTrpIleLysSerValPheLeuGlnTrp
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| CACCGITCACCCAGCACTCACGATCAAGGAGTGAAGAGTCTTCCTGCACAAG
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High-efficiency full-length cDNA
Meth. Enzymol. 303, 19-44 (1999)
99279253
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Mus musculus (house mouse)
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       /mol_type="genomic DNA"
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/gene="CHRN4"
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Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., RIKEN integrated sequence analysis (RISA) system-384-format sequencing pipeline with 384 multicapillary sequencer 20530913
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Group Phase I & II Team.
Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs
Nature 420, 565-573 (2002)
6 (bases 1 to 4037)
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/db_xref="G1:26340460"
/translation="WARCSNSMALLFSFGLLWLCSGVLGTDTEERLVEHLLDPSRYNK
LIRPAINGSELVTVQLMVSLAQLISVHEREQIMTINVWLTQEWEDYRLTWKPEDFDNM
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Encyclopedia Project of Genome Exploration Research Group in Riken
Genomic Sciences Center and Genome Science Laboratory in RIKEN.
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nicotinic, beta polypeptide 2 (neuronal) (MGD|MGI:87891,
GB|NM_009602, evidence: BLASTN, 99%, match=1498)
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/clone_lib="RIKEN full-length enriched mouse
                                                                                                                                                                                                                                                                                                                              The RIKEN Genome Exploration Research Group Phase II
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Please visit our web site for further details.
URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
Location/Qualifiers
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/mol_type="mRNA"

/strain="CSTBL/6J"

/db_xref="FANTOM DB:C530044Pl6"

/db_xref="MGI:24I7229"
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clone="C530044P16"
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KKVRLPSKHIWLPDVVLYNNADGMYEVSFYSNAVVSYDGSIFWLPPAIYKSACKIEVK
HFPFDQQNCTMKFRSWTYDRTEIDLVLKSDVASLDDFTPSGEWDIIALPGRRNENPDD
STYVDITYDFIIRRKPLFYTINLIIPCVLITSLAILVFYLPSDCGEKMTLCISVLAL
TVFLLLISKIVPPTSLDVPLVGKYLMFTMVLVTFSIVTSSVCVLNVHHRSPTTHTMAPW
                                                                 VKVVFLBKLPTLLFLQOPRHRCARORLKLRRRQREREGAGTLFFREGBAADPCTCFVN
PASWQGLAGAFQAEPAAAGLGRSMGPCSCGLREAVDGVRFIADHMRSEDDDQSVREDW
KYVAMVIDRLFLMIFVFVCVFGTIGMFLQPLFQNYTATTFLHSDHSAPSSK"
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153
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Conservative:
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tile FARNIUM CUBIOSTILUM and LIRE KIREN GENOME EXPLOIACION RESCRICT.

Group Phase I & II Team.

Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs

Adachi, J. Aizawa, K., Akimura, T., Arakawa, T., Bono, H., Carninci, P., Fukuda, S., Furuno, M., Hanagaki, T., Haracka, T., Hirozane, T., Hayashida, K., Hayatsu, N., Hanagaki, T., Haracka, T., Hirozane, T., Katoh, K., Kasukawa, T., Kasukawa, T., Katoh, H., Kawai, J., Kojima, Y., Kondo, S., Kurihara, C., Matsuyama, T., Koya, S., Kurihara, C., Matsuyama, T., Myzzaki, A., Murata, M., Nakamira, M., Nishi, K., Nomura, K., Numazaki, R., Ohno, M., Ohsato, N., Okazaki, D., Salto, R., Sakai, K., Sakai, K., Sakai, K., Sakai, K., Sakai, K., Sakai, K., Sakai, T., Sano, H., Sasaki, D., Saltoh, H., Sakai, C., Sakai, K., Sakai, T., Sasaki, D., Saltoh, M., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Takeda, Y., Tanaka, T., Tomaru, A., Toya, T., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Direct Submission Company RIKEN Genomic Sciences Center (GSC), Exploration Research Group, RIKEN Genomic Sciences Center (GSC), Kanagawa 230-0045, Japan (E-mail:genome-reseasc.tiken.go.jp, URL:http://genome.gec.riken.go.jp/, Tel:81-45-503-9222, URL:http://genome.gec.riken.go.jp/
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/clone_lib="RIKEN full-length enriched mouse cDNA library"
dev_stage="12 days embryo"
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yanamoto, R., Matsuncio, H., Sakguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, B., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Matsuura, S., Kawai, J., Okazaki, Y., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. RIKRI integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer 2053033
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The RIKEN Genome Exploration Research Group Phase II Team and the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The FANTOM Consortium and the RIKEN Genome Exploration Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Functional annotation of a full-length mouse cDNA collection Nature 409, 685-690 (2001)
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URL:http://fantom.gsc.riken.go.jp/.
Location/Qualifiers
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/db.xref="FANTON DB:D130070121"
/db.xref="MG1:2420100"
/db.xref="mG1:2420100"
/db.xref="b130070121"
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/protein_id="BAC34749.1"
/db_xref="GI:26342174"
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HTC; CAP trapper.
Mus musculus (house mouse)
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                         CysIleMetPheMetValAlaSerSerValValLeuThrValValValLeuAsnTyrHis
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Matches:
Conservative:
Mismatches:
Indels: 830 CTGCCAGGCCGACGAACGAG------(1-4046)(1-501) x AK051742 4.31e-95 910.50 57.38% 37.91% 34.49% Similarity: Percent Similarity: Scores: US-09-303-232-6 23 41 53 61 113 473 101 533 593 141 653 191 81 121 713 181 875 201 219 Query Match: Best Local Pred. No.: Alignment ORIGIN Score: ò g

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CACCGTTGGCCTACCACGCACCATGGCGCCCTGGGTCAAGGTGGTCTTCCTGGAGAG 1234 1375 1378 ||||||||| |GETCTGGGGGCCCTCGATGGGCCCATGCAGCTGTGGCCTCCGGGAAGCTGTGGACGGTGTA 1498 AL530299 1201 bp mRNA linear EST 23-MAY-2003 AL530299 Homo sapiens NEUROBLASTOMA COT 50-NORMALIZED Homo sapiens cDNA clone CSODD007YP05 5-PRIME, mRNA sequence. AL530299. GI:31068132 429 465 On Feb 13, 2001 this sequence version replaced gi:12793792.
Contact: Genoscope Genoscope - Centre National de Sequencage
Genoscope - Centre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqrefégenoscope.cns.fr, Web: www.genoscope.cns.fr
was normalized. Library was constructed by Life Technologies, a
division of Invitrogen. This sequence belongs to sequence cluster
7646.r For more information about this cluster, see ValAlaGluThrLeuProGlnValSerAspAlalleProLeuLeuGlyThrTyrPheAsn ATCTCCAAGATTGTGCCTCCCACCTCCACGTACCCCTGGCAAAGTACCTCATG CyslleMetPheMetValAlaSerSerValValLeuThrValValValLeuAsnTyrHis HisArgThrAlaAspIleHisGluMetProGlnTrpIleLysSerValPheLeuGlnTrp |||||||::: LeuProTrp11eLeuArgMetSerArgProGlyLysLys1leThrArgLysThr11eMet TTGCGAAGGCGCCAGCGGGAACGTGAG-------GGGGCAGGCAGGCACACTATTC---AsnValLeuAspIleAspAspAspPheArgHisGlyProProProAsnSerThrAla |||| |||::::::|||::: GTCAATCCTGCATCAATGCAGGGCTTTGGGGGCTTTCCAGGCTGAGCCCGCTGCAGCC MetAsnThrArgMetArgGluLeuGluLeuLysGluArgSerSerLysSerLeuLeuAla ----Trcceceaagercergcagergacceargracerge SerThrGlyAsnLeuGlyProGlyCysSerIlePheArgThrAspPheArgArgSerPhe GlnPheIleThrAlaArgMetLysLysAlaAspGluGluAlaGluLeuIleSerAspTrp LysPheAlaAlaMetValValAspArgPheCysLeuPheValPheThrLeuPheThrIle Homo Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; B. Mammalia; Eutheria; Primates; Catarrhini; Hominidae; I. (bases 1 to 1201) Li,W.B., Gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization On Published (2001) GlyLeuGlySerHisHisArgGluLeuHisLeuIleLeuArgGlu----ValArgProSerThrMetGluAspValGlyGly-TTTGGGACCATTGGCATGTTCCTG 1642 486 IleAlaThrValAlaValLeuLeu 493 Homo sapiens (human) Homo sapiens 1055 1295 EST 1115 1175 359 299 319 339 1235 379 1340 399 1376 419 1379 430 1439 446 1499 466 1559 1619 ACCESSION VERSION KEYWORDS SOURCE ORGANISM LOCUS DEFINITION RESULT 12 AL530299 REFERENCE AUTHORS TITLE JOURNAL COMMENT g 8 8 8 8 g qq ∂ g Dp ð ò 8 6 8 8 à QQ à g ŏ 셤 à 258 278

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 681
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primer. Five prime end enriched, double-strand cDNA was
digested with Not I and cloned into the Not I and EcoR V
sites of the pCMVSPORT 6 vector. Library was normalized."
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        cgi-bin/cluster.cgi?seq=CSODD007CH03QPl&cluster=7646.r. Contact Feng Liang Email : fliang@lifetech.com URL : http://fulllength.invitrogen.com/ InvitroGen Corporation 1600 Faraday Avenu Genoscope sequence ID : CSODD007CH03QPl. Location/Qualifiers
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1 (bases 1 to 1374)

Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
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                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens CHRNAl gene, VIRTUAL TRANSCRIPT, partial sequence, genomic survey sequence.

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AY40530.1 GI:39762204
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MetAlaLeuLeuGlyPheThrLeuProProAspSer-GlyGluLysLeuThrLeu-GlyV
                                                                                                   266 alThrIleLeuLeuSerLeuThrValPheLeuAsnLeuValAlaGluThrLeuProGlnV
                                                                                                                                      982 CATCCGATICGGTACCATTGAWAGCCCAGTTCTTCGCCAGCACCATGATCATCGTGGGCT
                                          Clark, A.G., Glanowski, S., Nielson, R., Thomas, P., Kejariwal, A., Todd, M.A., Tanenbaum, D.M., Civello, D.R., Lu, F., Murphy, B., Ferriera, S., Wang, G., Zheng, X.H., White, T.J., Sninsky, J.J., Adams, M.D. and Cargill, M.
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Submitted (16-NOV-2003) Celera Genomics, 45 West Gude Drive,
Rockville, MD 20850, USA
This sequence was made by sequencing genomic exons and order
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Conservative:
Mismatches:
Indels:
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Cy 380 ValleuAspileAspAspAspPheArgHi	A Mun Ak An	AUTHORS Carninci, P., Shibata, Y., Hayatsu, N Itoh, M., Konno, H., Okazaki, Y., Mur FITLE Normalization and subtraction of co prepare full-length cDNA libraries JOURNAL S049374 PUBMED 11042159 REFERENCE AUTHORS Shibata, K., Itoh, M., Aizawa, K., Na, Kanamanco, R., Nathananco, H., Shibata, K., Itoh, M., Mishi, K., Kii Sumi, N., Ishii, Y., Nashayanco, H., Sakaguci Fujiwake, S., Inoue, K., Togawa, Y., Kohawanco, H., Sakaguci Ronno, H., Ishikawa, T., Ogawa, K., Kohazaki, Y., Mishika, K., Kohazaki, Y., Mishika, K., Kohazaki, Y., Mishika, Cawa, X., Chananco, H., Sakaguci Rondo, Y., Ishikawa, T., Ogawa, K., Chazaki, Y., Miramafa, M., Tonno, Y., Okazaki, Y., Miramafa, M., Tonno, Y., Miramafa, M., Tonno, Y., Miramafa, M., Tono, Y., Miramafa, M., Miramafa, M., Tono, Y., Miramafa, M., Miramafa, M., Miramafa, M., Miramafa, M., Miramafa, M., Miramafa, M.,	TITLE RIKEN integrated sequence analysis sequencing pipeline with 384 multicondended sequence and in 1757-1771 (200 REFERENCE THE FUNCTIONAL GENERAL SEPTEMBRICE SAUTHORS THE FANTOM CONSORTIUM and the RIKEN AUTHORS THE FANTOM CONSORTIUM and the RIKEN AUTHORS THE FANTOM CONSORTIUM and the RIKEN STORY SECTION Phase I & II Team.
	144 LysSerThrCysLysMetAspIleAlaTrpPheProPheAspAspGlnHiscysAspMet 163 144 LysSerThrCysLysMetAspIleAlaTrpPheProPheAspAspGlnHiscysAspMet 163 145 LysSerThrCysLysMetAspIleAlaTrpPheProPheAspAspGlnHiscySAspMet 163 146 LysPheGlySerTrpThrTysAspGlyAssGlnHeuAspLeuLysAspGluAla 183 1493 AAGCTGGGCACCTGGACCTGCTGCTGTGGCCATCACCGGAAGCGAC 549 184 GlyGlyAspLeuSerAspPheIleThrSmGlnLeuAspLeuIleGlyMetProGly 203 184 GlyGlyAspLeuSerAspPheIleThrSmGlyGluTrpTyrLeuIleGlyMetProGly 203 185 CAGCCAGACCTGAGGACTTCATGGAGGGGGGGGGGGGGG	LeulleSerSerMetAlaLeuLeuGlyPheThrLeuProProAspSerGlyGluLysLeu	910 TTGGTCATTGCCTCCATCATCACTGTCATCACCACCACCACCACCACCGCTCACCC 969 323 AsplleHisGluMetProGlnTrplleLysSerValPheLeuGlnTrpLeuProTrplle 342
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Nagaoka, S., Sasaki, N., Carninci, P., Kitsunai, T., Tashiro, H., Itoh, M., Hazama, M., Nishine, T., Harada, A., aguchi, S., Ikegami, T., Kashiwagi, K., Izawa, M., Ohara, E., Watahiki, M., C., Tanaka, T., Matsuura, S., Kawai, J., Sis (RISA) system--384-format (2000)
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GGCATCAAGTACATCGCAGAGACCATGAAG 1221
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alon cDNA, RKEN full-length
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rramatsu,M. and Hayashizaki,Y.
cap-trapper-selected cDNAs to
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HisGlyProProProAsnSerThrAla 398
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TRAVEGVYATADHLKAEDTDFSVKEDWKYVAMVIDRIFLEMMFIIVLKAELPSPAL
TRAVEGVYATADHLKAEDTDFSVKEDWKYVAMVIDRIFLEMMFIIVLLLGTVGLYGGTVGLEPPW
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nicotinic, alpha polypeptide 4 (MGD|MGI:87888,
GB|NM_015730, evidence: BLASTN, 99%, match=1946)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Flease visit our web site for further details. URL:http://genome.gsc.riken.go.jp/
URL:http://fantom.gsc.riken.go.jp/.
Location/Qualifiers
1. .2940
/organism="Mus musculus"
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/clone lib="RIKEN full-length
/dev gfage="adult"
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of 60,770 full-length cDNA
Nature 420, 563-573 (2002)
6 (bases 1 to 2940)
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Matches: Conservative: Mismatches: Indels:

5.92e-93 890.50 48.05% 33.71%

Percent Similarity:
Best Local Similarity:
Query Match:
DB:

Score:

Gaps:

Length:

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1159
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                                                                                                                2003 AGCCACATAGAGACCCGGGCCCATGCGGAGGAGGGCTCCTGAAAGAGAGACTCTTCTCTGGC
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AAGATTGACTTGGTG---AGCATGCACAGCCGTGTGGACCAACTGGACTTCTGGGAAAGT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294 GlyThrTyrPheAsnCysIleMetPheMetValAlaSerSerValValLeuThrValVal
                                                                             ------GluGlnGlyProHis---GluLysArgLeuLeuAsnAlaLeuLeuAlaAsn
                                                                                                                                                         TyrAsnThrLeuGluArgProValAlaAsnGluSerGluProLeuGluValArgPheGly
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    ProMetLeuAlaAlaLeuAlaLeuLeu--
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                                                                                                                                  PhePheAsnLeuIleValProCysValLeuIleSerSerMetAlaLeuLeuGlyPheThr
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LAGMI"
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|TGGGTGAAGCAGGAGTGGCATGACTACAAACTGCGCTGGGAGCCCTGGTGACTACGAGAAT
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Matches:
Conservative:
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